

**SITE INSPECTION PRIORITIZATION REPORT
AND PRESCORE PACKAGE
DELTA SHIPYARD
PHASE III
HOUMA, LOUISIANA
EPA ID NO.: LAD058475419**

Prepared for:

**U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733**

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INTRODUCTION

Roy F. Weston, Inc. (WESTON[®]) is pleased to present this report, which summarizes the results of the file review and PREscore package completed for the Delta Shipyard (DS) site (LAD058475419) in Houma, Terrebonne Parish, Louisiana. WESTON was tasked by the U.S. Environmental Protection Agency Region VI (EPA VI) to review existing file information and gather additional information (Phase III activities) that would more accurately determine a site score for the DS site. This effort is part of the Site Inspection Prioritization (SIP) Work Assignment for various sites in EPA VI. The PREscore package for the site is attached as part of the report.

EPA established the SIP process to help assess known or potential hazardous waste sites, address first those sites that pose the greatest threat to human health and the environment, and standardize the criteria by which sites are evaluated within the Superfund program. Through the SIP, EPA reviews sites that generally have had a complete Site Inspection (SI) performed on them but that have not received a final decision regarding the need for further investigation or remediation. The outcome of the SIP indicates whether the available information for the site meets a minimum standard of evaluation reflecting the requirements of the revised Hazard Ranking System (HRS). The SIP process better enables EPA to determine if a site is likely to receive a score of 28.5 or above under the HRS, potentially making it a candidate for placement on the National Priorities List (NPL). If it is determined that the site will not score above the NPL threshold of 28.5, EPA is in a position to declare that the site evaluation, under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), has been accomplished.

SITE BACKGROUND INFORMATION

The DS site is located in Houma, Terrebonne Parish, Louisiana. The geographic coordinates of the site are approximately latitude 29°34'2" north and longitude 90°42'18" west. A Site Location Map is provided in Attachment 1 as Figure 1, and a Site Area Map is provided in Attachment 1 as Figure 2. The site can be reached by traveling south on Highway 90 into Houma until reaching East Main Street. Travel east on Main Street for approximately 1.8 miles and turn south on Howard Avenue. From Howard Avenue, travel south for approximately 2.2 miles until reaching Industrial Boulevard. Turn east and travel 0.5 mile. The site is on the south side of Industrial Boulevard.

WESTON contacted Lynn Dean of Elevated Boats Incorporated (EBI) (8404 Colonel Drive, Shelmett, Louisiana 70043), the present owner of the site, in May 1994. Kenneth Serigne, Department Manager for the EBI property, signed an EPA Access Agreement on 15 June 1994, allowing WESTON access to the DS site. Mr. Dean was reached at (504) 278-4200. Mr. Serigne was reached at (504) 868-9655. WESTON met with Mr. Serigne during the site reconnaissance and site sampling mission.

WESTON completed the SIP site reconnaissance on 12 July 1994. The 40-acre site is part of a large industrial park covering approximately 165 acres in southeastern Houma, Louisiana. The industrial park occupies land between a boat slip and Bayou La Carpe. Bayou La Carpe provides access to the Gulf of Mexico through the Houma Intercoastal Waterway. EBI purchased 110 acres of the park in 1985 and currently leases part of it to other industries. The site is surrounded by Gemoco to the north, Christie Industries to the southeast, and Offshore Diving, Salvaging, and Blasting Company to the west. EBI maintains an active fabrication plant/office building on-site.

DS owned the site prior to EBI; the year operations began at the site is unknown. DS consisted of a barge gas-freeing operation and a cleaning and repairing facility for small cargo vessels, fishing vessels, and oil barges. The gas-freeing operation was required because the vessels had to be certified vapor free by the U.S. Coast Guard before repair work could commence. As part of the gas-freeing process, the vessels were steam-cleaned and the oily wastes were removed. The generated oils and wastewater were sent through a separation process after which the waste oil was recovered and sold. Wastes were stored in surface impoundments on-site. Two small waste pits, located approximately 100 feet east of the fabrication building, were sampled and closed in 1984 under the supervision of the Louisiana Department of Environment Quality (LDEQ) Hazardous Waste Division. Two monitoring wells are reportedly located around the closed pits; however, during the site reconnaissance, only one could be located. The pits were reportedly used to dispose of waste oil and oil field drilling material. A Site Plan Map is provided in Attachment 1 as Figure 3.

The DS site contains old gas-stripping equipment (i.e., storage tanks, separator, boiler) left behind from the former operation. The two closed waste oil surface impoundments are now a parking lot used by EBI employees. Four larger pits are located approximately 800 feet south of the fabrication building and are surrounded by dense vegetation. One pit is located west and the other three are located east of Plant Shell Road. According to a Wink Engineering sampling report in 1985, the pit west of the road is actually three pits in series that have been covered over with fill material. For the purposes of this Phase III report, these pits are considered one single pit. The three pits east of the road are exposed and covered with a crusty black substance. At the time of the site reconnaissance, rainwater containing an oily sheen was pooled on the surface of the pits.

The groundwater, soil, and surface water migration pathways are of concern at the site because of possible hazardous constituents being released to these pathways.

Previous investigations at the DS site include the following:

- A Site Inspection (SI) by Ecology & Environment, Inc. on 11 March 1981.
- A SI by The Earth Technology Corporation on 12 September 1984.
- A sampling report by Wink Engineering in July 1985.

Phase III DATA

Additional site information resulting from Phase III SIP efforts (information/data gathering/site reconnaissance/sampling mission) is described below.

Identification and Location of Groundwater Wells

WESTON used file information from EPA VI and contacted the Louisiana Department of Transportation (LDOT) for information on water wells within a 1-mile radius of the site. LDOT files indicate several monitoring wells and 1 rig supply well are located within a 1-mile radius of the site. The rig supply well is plugged and abandoned. The closest wells are three monitoring wells located 2,000 feet to the northeast of the site. They are owned by Torch Energy and are completed in the Mississippi River Alluvial Aquifer Confining Unit. They were drilled in 1990 and range from 7 to 10 feet deep. A Water Well Location Map is provided in Attachment 1 as Figure 4.

Determination of Surface Water Intakes Within the Target Distance Limit

WESTON contacted Bryan Sampey, Plant Manager at the Houma District 3 Water Plant, to determine surface water intakes within the 15-mile stream-flow Target Distance Limit (TDL). The plant is located near the confluence of the Houma Navigational Canal and Bayou Black. Mr. Sampey stated that the Houma plant takes its water from the Houma Navigational Canal. The canal is tidally influenced and saltwater intrusion is a problem. The plant uses Bayou Black as a secondary source of water when saltwater intrusion occurs in the canal. According to Mr. Sampey, the plant serves an estimated 30,000 people. The plant lies 2.55 stream miles upstream of the PPE; however, the canal is tidally influenced and therefore contaminants from the DS site could possibly migrate towards the water plant.

Identification and Location of Wetlands and Sensitive Environments

Surface water runoff draining from the site flows into Bayou La Carpe. Bayou La Carpe enters the Houma Navigational Canal just south of the site. According to the Houma, Louisiana, 7.5-minute wetlands map, the Houma Navigational Canal is bordered by extensive wetland areas. A Surface Water Pathway Map is provided in Attachment 1 as Figure 5.

Site Accessibility

Based on the WESTON Phase III site reconnaissance and sampling mission, the site is fairly accessible to the general public by both vehicle and foot. However, the site is located in an industrial park and the land has little or no recreational value.

Determination of Population by Distance Rings

During the Phase III effort, WESTON determined the population within target distances using the Geographical Exposure Modeling System (GEMS) Database. According to GEMS, 15

people live within the 0.25- to 0.5-mile radius, 3,578 people live within the 0.5- to 1-mile radius, and 36,895 live within the 1- to 4-mile radius of the site.

Identification of Fisheries

WESTON contacted Gerald Adkins of the Louisiana Department of Wildlife and Fisheries (LDWF) to determine if fisheries existed within the 15-mile TDL. Bayou La Carpe and the Houma Navigational Canal are considered limited fisheries because of problems with saltwater intrusion and marine traffic. Adkins stated that at certain times of the year, some freshwater catfish and crab fishing takes place.

Sampling Information

In general accordance with the objectives of the SIP, WESTON implemented a sampling strategy primarily aimed at documenting the presence of hazardous substances at the DS site. WESTON collected soil and sediment samples at the site on 22 August 1994. WESTON completed the sampling activities in general accordance with the site-specific Task Work Plan and Health and Safety Plan. All samples collected during the SIP were shipped to EPA-designated laboratories by Federal Express Priority Overnight Service. Samples requiring organic analyses were sent to Keystone Lab, Houston, Texas, and samples requiring inorganic analyses were sent to Silver Valley Labs, Inc., Kellog, Indiana. CLP data package excerpts are provided in Attachment 4. The sampling activities and analytical results associated with the waste source characterization are summarized in this section of the report.

WESTON collected seven sediment samples (SED-1 through SED-7) and three soil samples (SS-1 through SS-3) in an effort to document the presence and migration of hazardous substances associated with the potential hazardous waste source areas (HWSAs) at the site. Sample locations are shown in Attachment 1 as Figure 6. SIP soil/sediment sample locations, descriptions, and rationales are summarized in Attachment 3 as Table 1.

The soil and sediment samples were analyzed for the following parameters:

- Volatile organic compounds (VOCs),
- Base, neutral, and acid extractable compounds (BNAs),
- Pesticide and polychlorinated biphenyls (PCBs), and
- Inorganic constituents and cyanide.

HRS SCORING

Preliminary PAscore

Using the data provided by EPA VI from Resource Conservation and Recovery Act (RCRA) and CERCLA files, WESTON developed a preliminary HRS score for the site using PAscore

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(Version 2.0). The site received a PAscore of significant value to warrant evaluation of the site using PREscore. PREscore was used to develop and document the HRS score for the site in more detail.

PREscore

Factors that had the greatest influence on the Phase III PREscore evaluation are identified in the following sections. Conclusions concerning the site HRS score are presented following the discussion of factors affecting the PREscore. The Phase III PREscore package for the site is provided as Attachment 2.

WASTE SOURCE CHARACTERISTICS

The laboratory analytical results for soil samples SS-2 and SS-3 and sediment samples SED-1, SED-2, and SED-3 were collected from the pits during the SIP and can be used to characterize the potential HWSAs.

Four waste source areas were identified in the file review and site reconnaissance. They consist of four pits used to store waste oils from the DS ship cleaning and repair operation. Pit 4 is actually three pits according to a Wink Engineering report; however, the pits are aligned in series, covered over, and vegetated. For purposes of the Phase III report, they are designated together as Pit 4. The other three pits (1, 2, and 3) are exposed and covered by a black crusty substance. Pits 1, 2, and 3 are elevated and surrounded by a 3- to 6-foot berm. The four pits together have an approximated surface area of 294,000 square feet. The waste characteristics of the site were assessed for the groundwater, soil, and surface water exposure pathways.

Samples collected from the pits indicate the presence of volatiles, semivolatile organics, pesticides, and metals. Sediment analytical results reported at concentrations exceeding three times background concentrations are summarized in Attachment 3, Tables 2 and 3. Soil analytical results reported at concentrations three times background concentrations are summarized in Attachment 3, Table 4. The CLP data summary package is provided as Attachment 4 and photodocumentation is provided as Attachment 5.

Groundwater Pathway

WESTON did not collect any groundwater samples as part of this effort. As part of the monitoring well installation in 1984, soil borings were drilled at the site. The borings indicated low permeability silty clays to 50 feet below grade. No groundwater uses, domestic or industrial, were documented within a 1-mile radius of the site. The factors that most influenced the groundwater pathway Phase III score are as follows:

- LDOT information stating that there is no groundwater use within 1 mile of the site.

- The lack of analytical data to determine a release of hazardous wastes to groundwater in the vicinity of the site.
- The low permeability of the clay soils at the site.

Surface Water Pathway

The laboratory analytical results for sediment samples SED-4 through SED-7 collected during the SIP can be used to characterize the potential for contaminant migration in the surface water pathway. A drainage ditch runs along the west and south ends of Pits 1 through 3. An overflow pipe on Pit 2 drains rainwater from the pit into the ditch. Surface water draining from the pits follows the ditch approximately 0.3 mile until reaching the probable point of entry (PPE) at Bayou La Carpe. Bayou La Carpe flows approximately 4,000 feet south until reaching the Houma Navigational Canal. The Houma Navigational Canal is tidally influenced. Due to the tidal influence, two TDLs are assigned to the site, TDL-1 and TDL-2. TDL-1 is located approximately 2.55 miles upstream of the PPE at the water plant, the farthest point where saltwater intrusion has been documented. TDL-2 is located 15 miles downstream in the Houma Navigational Canal.

The Houma Water Plant is located at the confluence of Bayou Black and the Houma Navigational Canal, approximately 2.55 miles upstream of the site. Bryan Sampey, plant manager of the Houma Water Plant, stated that when saltwater intrusion becomes a problem at the surface water intake, the plant switches to Bayou Black for a water supply. The saltwater encroachment is typically seasonal. The plant reportedly serves 30,000 residents in the surrounding area. According to Gerald Adkins of LDWF, Bayou La Carpe and the Houma Navigational Canal are considered limited fisheries because of saltwater intrusion and marine traffic.

Sediment samples collected from the drainage ditch surrounding Pits 1 through 3 indicate the presence of several semivolatile organics and metals. Sediment analytical results reported at concentrations exceeding three times background concentrations are summarized in Attachment 3, Tables 2 and 3. A Surface Water Pathway Map is provided in Attachment 1 as Figure 5.

Soil Exposure Pathway

The site is situated near a residential area and is accessible to the public; however, there are no residences within 200 feet of on-site contamination. The site serves as an industrial park and has little or no recreational value. EBI maintains 20 workers on-site. The residents of Houma living within 1 mile of the site were scored as nearby individuals. The most important factors considered for the soil exposure pathway are as follows:

- The pits are accessible and there is a residential population within the nearby vicinity. However, no recreational activities were documented on-site.
- Several on-site workers are present in the industrial park.

Air Pathway

The air pathway was not evaluated as part of the Phase III effort due to lack of data; however, during the SIP quantitative air monitoring, no readings were measured at levels above background concentrations in the breathing space around the pits. Readings taken near the surface of the pits did exceed background concentrations.

Data Gaps

WESTON identified several data gaps during the file review and PREscore evaluation. Some of these data gaps were filled (as directed by EPA VI) during Phase III data collection; however, additional data gaps remain and may significantly affect the site score. The most critical remaining data gaps include the following:

- Additional analytical data to indicate if hazardous materials present at the site are releasing to Bayou La Carpe and the Houma Navigational Canal.
- Additional analytical data to determine if hazardous materials are affecting the Houma Water Plant.
- Additional investigation of the sensitive environments associated with the surface water pathway and an accurate delineation of the upstream TDL.

CONCLUSIONS

The DS site is an inactive barge cleaning, repairing, and gas-freeing operation located on the southern side of Houma, in Terrebonne Parish, Louisiana. The DS site operated as a barge cleaning, repairing, and gas-freeing facility for an undetermined period of time prior to 1986 when EBI bought the site.

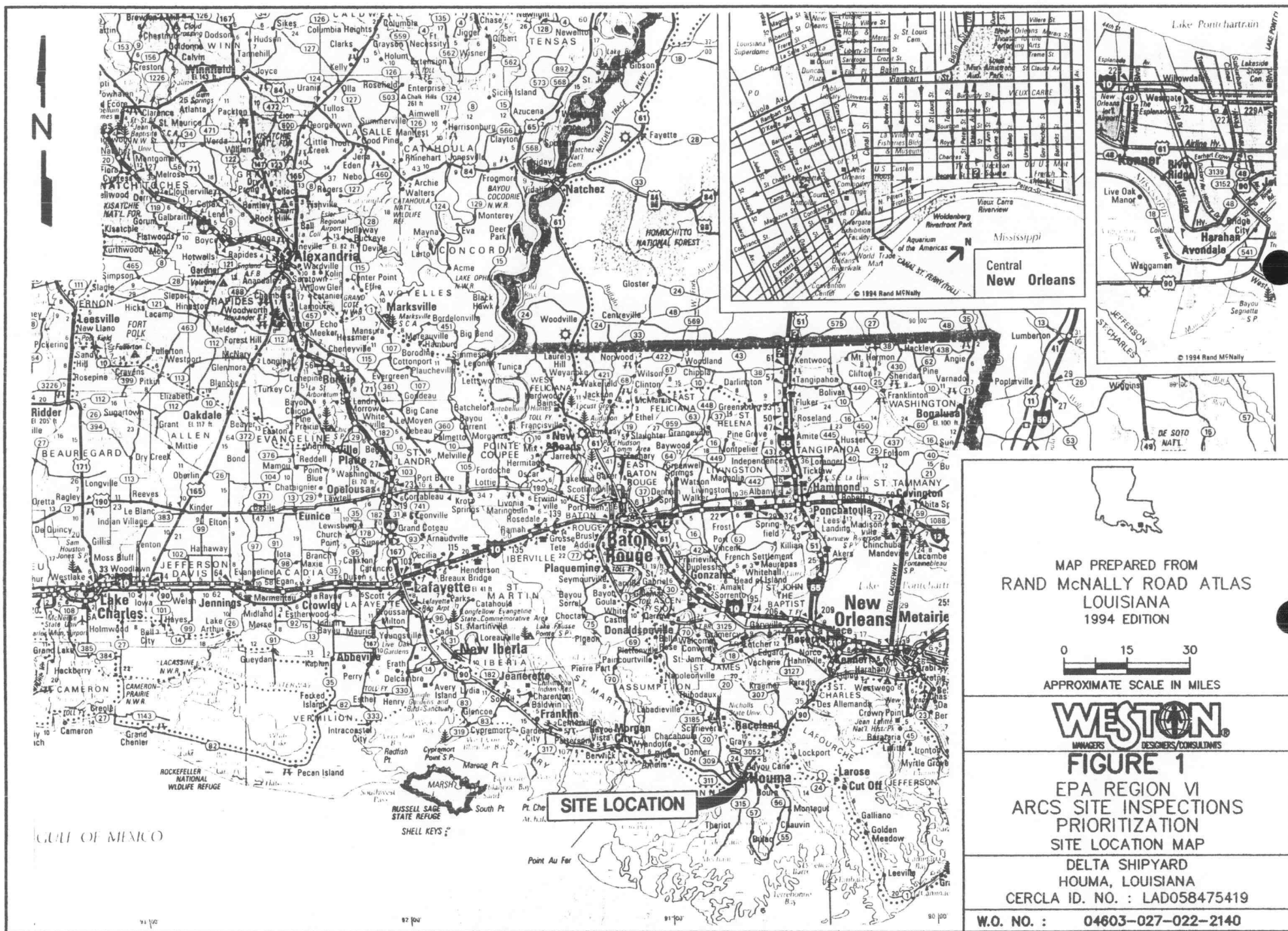
Concerns associated with the migration of hazardous constituents from the site and exposure pathways are summarized as follows:

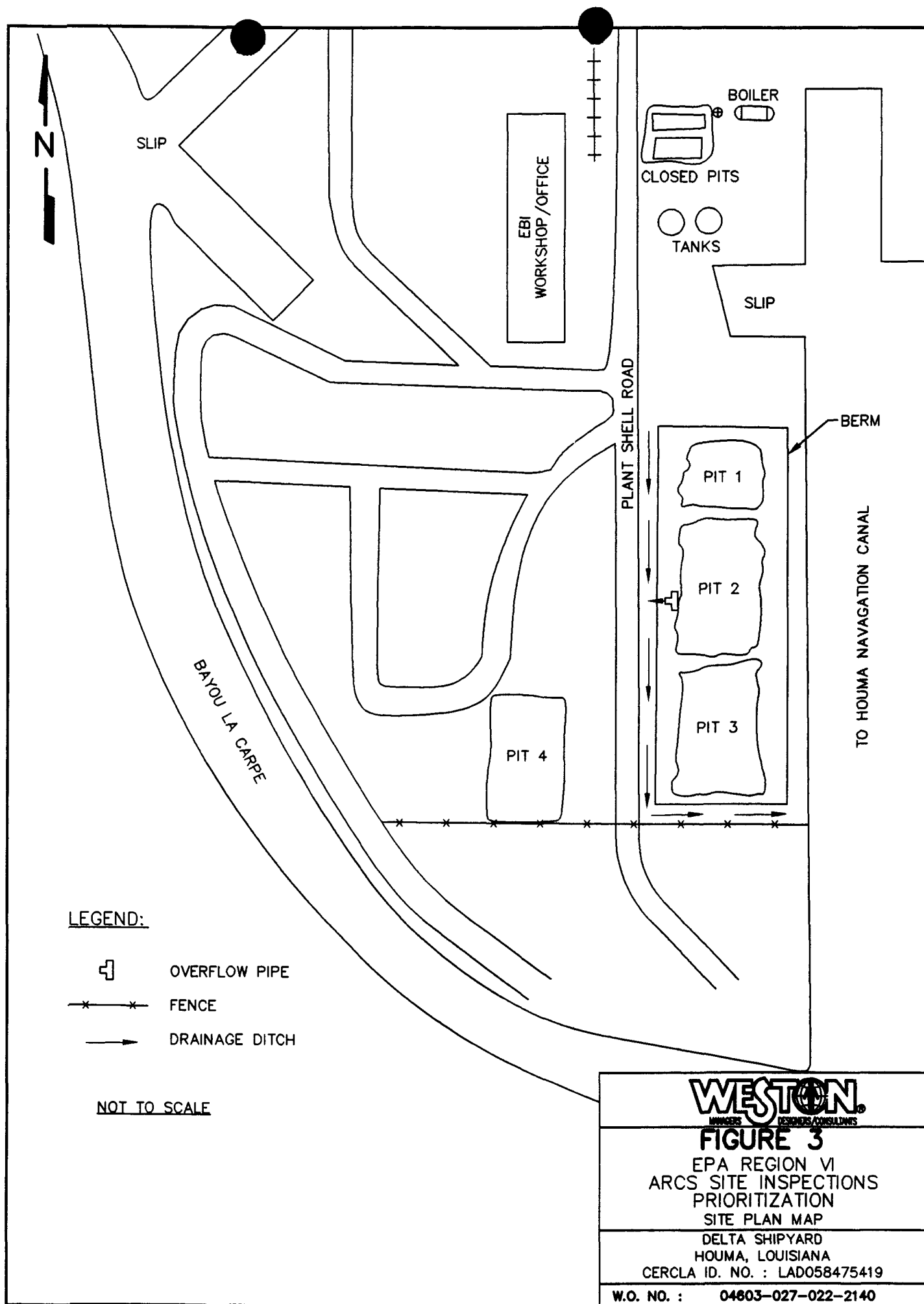
- Based on the information presented in the Groundwater Pathway section, a release of hazardous constituents to groundwater is of little concern. A release to groundwater has not been documented, the subsurface soils are relatively impermeable, and no groundwater use has been identified in the vicinity of the site.
- Based on the information presented in the Surface Water Pathway section, a release of hazardous constituents to surface water is of concern. Several hazardous constituents were detected in the drainage ditch leading to Bayou La Carpe. The Houma Water Plant surface water intake and several miles of wetlands frontage are located within the TDL.

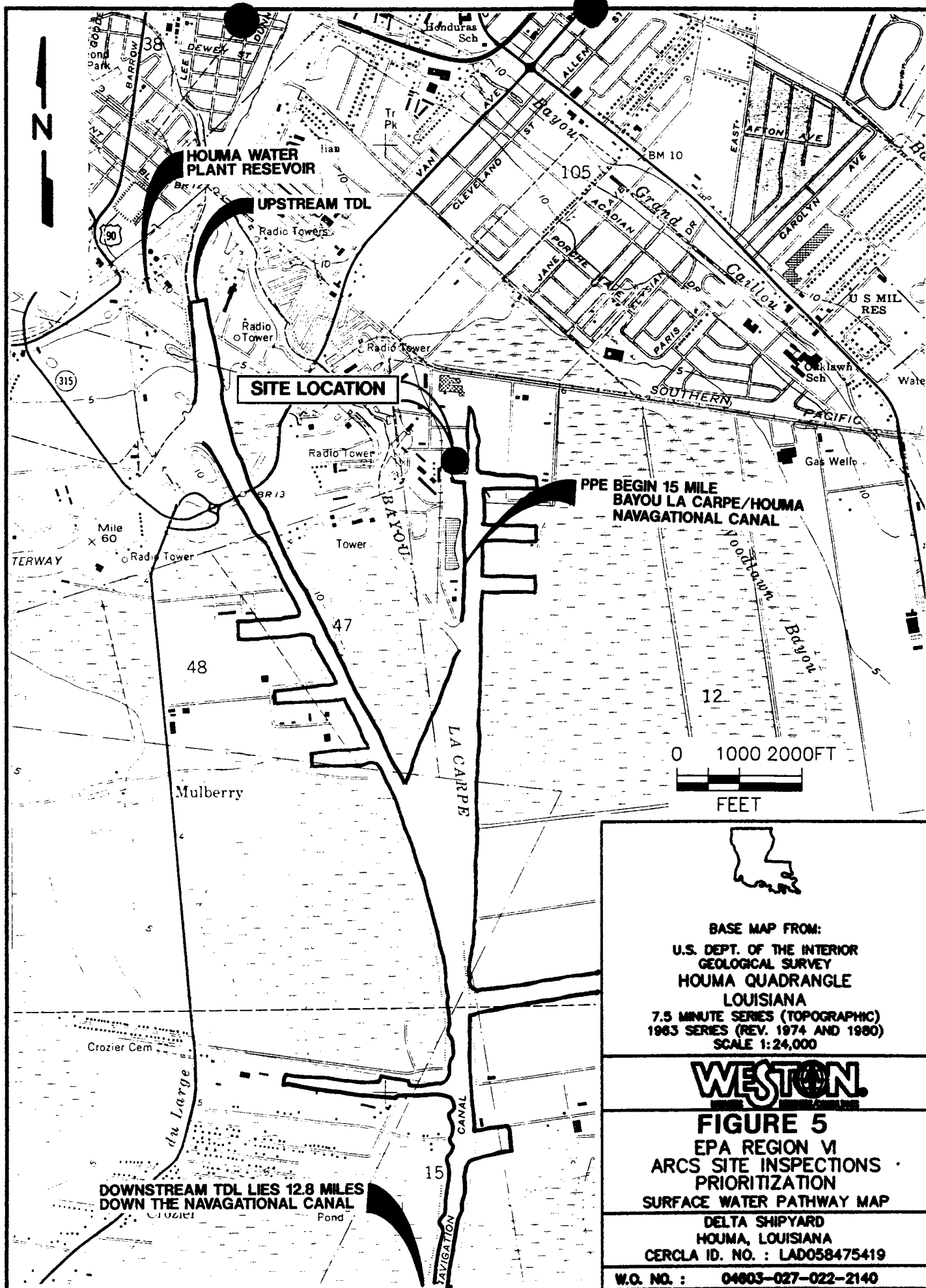
- Based on the information presented in the Soil Exposure Pathway section, a release of hazardous constituents is of concern because several semivolatile organics, pesticides, and heavy metals have been detected in the on-site pits at levels significantly above background concentrations. Soil exposure targets include the on-site workers and the nearby population.
- Based on the information presented in the Air Pathway section, the air pathway is of no concern because the barge cleaning, repairing, and gas-freeing facility is no longer active.

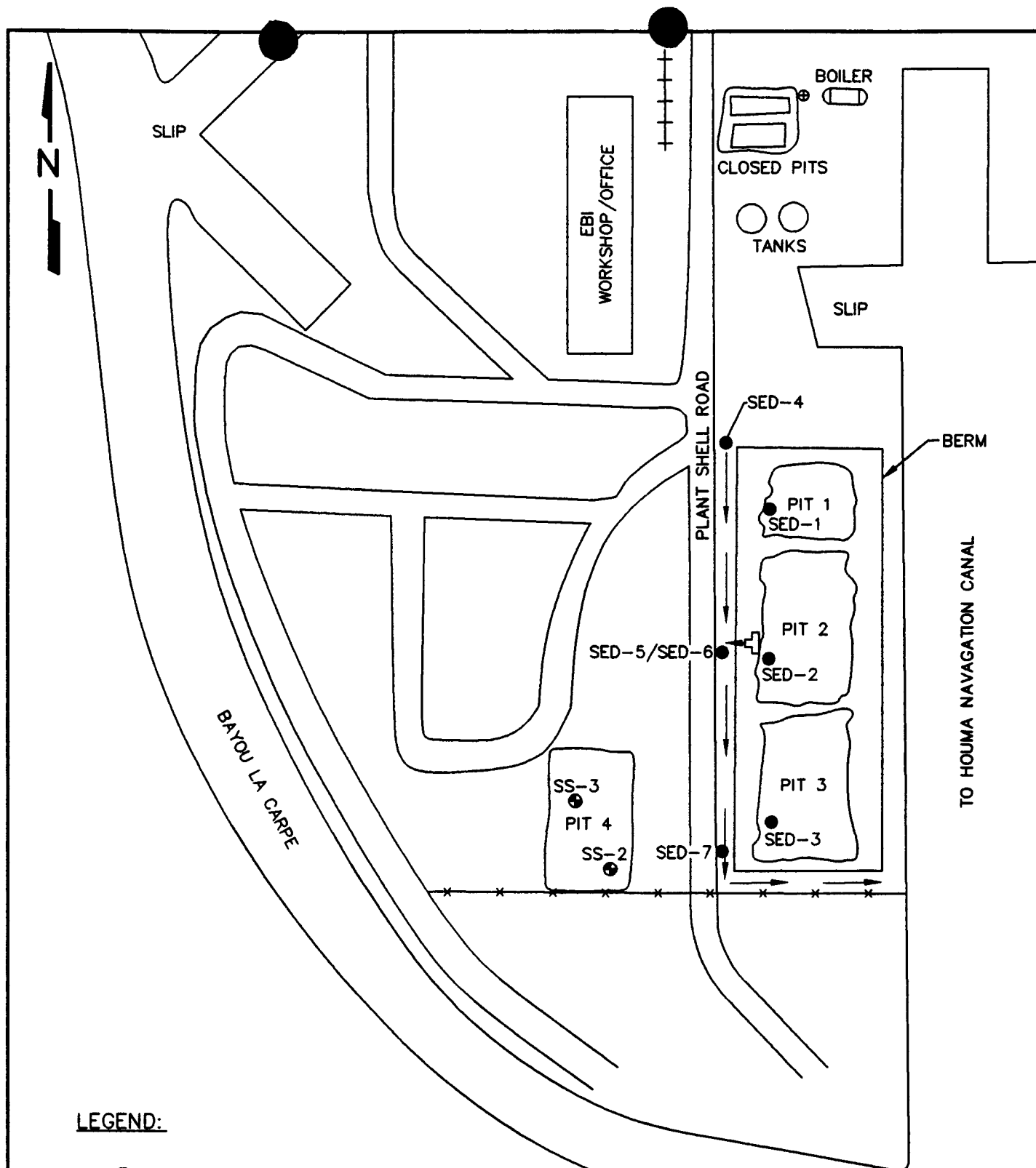
The individual pathways with the greatest influence on the HRS score were surface water and soil exposure pathways.

ATTACHMENT 1














LEGEND:

-  OVERFLOW PIPE
-  FENCE
-  DRAINAGE DITCH
-  SEDIMENT SAMPLE
-  SOIL SAMPLE

NOTE

SS-1 IS TAKEN OFFSITE AS A BACKGROUND SAMPLE.

NOT TO SCALE

WESTON
ENGINEERS/CONSULTANTS

FIGURE 6

EPA REGION VI
ARCS SITE INSPECTIONS
PRIORITIZATION
SAMPLE LOCATION MAP

DELTA SHIPYARD
HOUMA, LOUISIANA
CERCLA ID. NO. : LAD058475419

W.O. NO. : 04603-027-022-2140

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ATTACHMENT 2

Record Information

1. Site Name: Delta Shipyard
(as entered in CERCLIS)
2. Site CERCLIS Number: LAD058475419
3. Site Reviewer: Peter Rung
4. Date: 11/9/94
5. Site Location: Houma, Terrebonne Parish, Louisiana
(City/County,State)
6. Congressional District:
7. Site Coordinates: Multiple
Latitude: 29 34'02.0" Longitude: 090 42'18.0"

Site Description

1. Setting: Suburban
2. Current Owner: Private - Industrial
3. Current Site Status: Active
4. Years of Operation: Active Site , from and to dates: -1994
5. How Initially Identified: Unknown
6. Entity Responsible for Waste Generation:
 - Other - Ship cleaning facility
7. Site Activities/Waste Deposition:
 - Surface Impoundment

Waste Description

8. Wastes Deposited or Detected Onsite:

- Organic Chemicals
- Inorganic Chemicals
- Metals
- Oily Waste

Response Actions

9. Response/Removal Actions:

RCRA Information

10. For All Active Facilities, RCRA Site Status:

- Not Applicable

Demographic Information

11. Workers Present Onsite: Yes

12. Distance to Nearest Non-Worker Individual: > 1/4 - 1/2 Mile

13. Residential Population Within 1 Mile: 3593.0

14. Residential Population Within 4 Miles: 40488.0

Water Use Information

15. Local Drinking Water Supply Source:

- Surface Water (within 15 mile distance limit)

16. Total Population Served by Local Drinking Water Supply Source: 30000.0

17. Drinking Water Supply System Type for Local Drinking Water Supply Sources:

- Municipal (Services over 25 People)

18. Surface Water Adjacent to/Draining Site:

- Stream

PREscore 2.0 - PRESCORE.TCL File 05/11/93
HRS DOCUMENTATION RECORD
Delta Shipyard - 12/20/94

PAGE: 1

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6. Congressional District:
7. Site Coordinates: Multiple

Latitude: 29 34'02.0"

Longitude: 090 42'18.0"

	Score
Ground Water Migration Pathway Score (Sgw)	0.00
Surface Water Migration Pathway Score (Ssw)	100.00
Soil Exposure Pathway Score (Ss)	3.42
Air Migration Pathway Score (Sa)	0.00
Site Score	50.03

NOTE

EPA uses the terms "facility," "site," and "release" interchangeably. The term "facility" is broadly defined in CERCLA to include any area where hazardous substances have "come to be located" (CERCLA Section 109(9)), and the listing process is not intended to define or reflect boundaries of such facilities or releases. Site names, and references to specific parcels or properties, are provided for general identification purposes only. Knowledge regarding the extent of sites will be refined as more information is developed during the RI/FS and even during implementation of the remedy.

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER MIGRATION PATHWAY SCORESHEET
Delta Shipyard - 12/20/94

PAGE: 2

GROUND WATER MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release to an Aquifer Aquifer:		
1. Observed Release	550	0
2. Potential to Release		
2a. Containment	10	10
2b. Net Precipitation	10	3
2c. Depth to Aquifer	5	5
2d. Travel Time	35	35
2e. Potential to Release [lines 2a(2b+2c+2d)]	500	430
3. Likelihood of Release	550	430
Waste Characteristics		
4. Toxicity/Mobility	*	2.00E+03
5. Hazardous Waste Quantity	*	10000
6. Waste Characteristics	100	56
Targets		
7. Nearest Well	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	0.00E+00
10. Wellhead Protection Area	20	0.00E+00
11. Targets (lines 7+8d+9+10)	**	0.00E+00
12. Targets (including overlaying aquifers)	**	0.00E+00
13. Aquifer Score	100	0.00
GROUND WATER MIGRATION PATHWAY SCORE (Sgw)	100	0.00

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors DRINKING WATER THREAT	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release	550	0
2. Potential to Release by Overland Flow		
2a. Containment	10	10
2b. Runoff	25	1
2c. Distance to Surface Water	25	20
2d. Potential to Release by Overland Flow [lines 2a(2b+2c)]	500	210
3. Potential to Release by Flood		
3a. Containment (Flood)	10	10
3b. Flood Frequency	50	25
3c. Potential to Release by Flood (lines 3a x 3b)	500	250
4. Potential to Release (lines 2d+3c)	500	460
5. Likelihood of Release	550	460
Waste Characteristics		
6. Toxicity/Persistence	*	1.00E+04
7. Hazardous Waste Quantity	*	10000
8. Waste Characteristics	100	100
Targets		
9. Nearest Intake	50	1.00E+01
10. Population		
10a. Level I Concentrations	**	0.00E+00
10b. Level II Concentrations	**	0.00E+00
10c. Potential Contamination	**	8.16E+02
10d. Population (lines 10a+10b+10c)	**	8.16E+02
11. Resources	5	0.00E+00
12. Targets (lines 9+10d+11)	**	8.26E+02
13. DRINKING WATER THREAT SCORE	100	100.00

* Maximum value applies to waste characteristics category.
 ** Maximum value not applicable.

PREscore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 4
 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET
 Delta Shipyard - 12/20/94

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
Likelihood of Release		
14. Likelihood of Release (same as line 5)	550	460
Waste Characteristics		
15. Toxicity/Persistence/Bioaccumulation	*	5.00E+08
16. Hazardous Waste Quantity	*	10000
17. Waste Characteristics	1000	1000
Targets		
18. Food Chain Individual	50	2.00E+00
19. Population		
19a. Level I Concentrations	**	0.00E+00
19b. Level II Concentrations	**	0.00E+00
19c. Pot. Human Food Chain Contamination	**	6.00E-04
19d. Population (lines 19a+19b+19c)	**	6.00E-04
20. Targets (lines 18+19d)	**	2.00E+00
21. HUMAN FOOD CHAIN THREAT SCORE	100	11.15

* Maximum value applies to waste characteristics category.
 ** Maximum value not applicable.

PREscore 2.0 - PRESCORE.TCL File 05/11/93 PAGE: 5
 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET
 Delta Shipyard - 12/20/94

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
22. Likelihood of Release (same as line 5)	550	460
Waste Characteristics		
23. Ecosystem Toxicity/Persistence/Bioacc.	*	5.00E+08
24. Hazardous Waste Quantity	*	10000
25. Waste Characteristics	1000	1000
Targets		
26. Sensitive Environments		
26a. Level I Concentrations	**	0.00E+00
26b. Level II Concentrations	**	0.00E+00
26c. Potential Contamination	**	3.50E-01
26d. Sensitive Environments (lines 26a+26b+26c)	**	3.50E-01
27. Targets (line 26d)	**	3.50E-01
28. ENVIRONMENTAL THREAT SCORE	60	1.95
29. WATERSHED SCORE	100	100.00
30. SW: OVERLAND/FLOOD COMPONENT SCORE (Sof)	100	100.00

* Maximum value applies to waste characteristics category.
 ** Maximum value not applicable.

PREscore 2.0 - PRESCORE.TCL File 05/11/93
 SOIL EXPOSURE PATHWAY SCORESHEET
 Delta Shipyard - 12/20/94

PAGE: 6

SOIL EXPOSURE PATHWAY Factor Categories & Factors RESIDENT POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
1. Likelihood of Exposure	550	550
Waste Characteristics		
2. Toxicity	*	1.00E+04
3. Hazardous Waste Quantity	*	10000
4. Waste Characteristics	100	100
Targets		
5. Resident Individual	50	0.00E+00
6. Resident Population		
6a. Level I Concentrations	**	0.00E+00
6b. Level II Concentrations	**	0.00E+00
6c. Resident Population (lines 6a+6b)	**	0.00E+00
7. Workers	15	5.00E+00
8. Resources	5	0.00E+00
9. Terrestrial Sensitive Environments	***	0.00E+00
10. Targets (lines 5+6c+7+8+9)	**	5.00E+00
11. RESIDENT POPULATION THREAT SCORE	**	2.75E+05

* Maximum value applies to waste characteristics category.

** Maximum value not applicable.

*** No specific maximum value applies, see HRS for details.

PREscore 2.0 - PRESCORE.TCL File 05/11/93
 SOIL EXPOSURE PATHWAY SCORESHEET
 Delta Shipyard - 12/20/94

PAGE: 7

SOIL EXPOSURE PATHWAY Factor Categories & Factors NEARBY POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
12. Attractiveness/Accessibility	100	1.00E+01
13. Area of Contamination	100	6.00E+01
14. Likelihood of Exposure	500	2.50E+01
Waste Characteristics		
15. Toxicity	*	1.00E+04
16. Hazardous Waste Quantity	*	10000
17. Waste Characteristics	100	100
Targets		
18. Nearby Individual	1	0.00E+00
19. Population Within 1 Mile	**	3.00E+00
20. Targets (lines 18+19)	**	3.00E+00
21. NEARBY POPULATION THREAT SCORE	**	7.50E+03
SOIL EXPOSURE PATHWAY SCORE (Ss)	100	3.42

* Maximum value applies to waste characteristics category.
 ** Maximum value not applicable.

AIR PATHWAY SCORESHEET
Delta Shipyard - 12/20/94

AIR MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release	550	0
2. Potential to Release		
2a. Gas Potential to Release	500	0
2b. Particulate Potential to Release	500	0
2c. Potential to Release	500	0
3. Likelihood of Release	550	0
Waste Characteristics		
4. Toxicity/Mobility	*	0.00E+00
5. Hazardous Waste Quantity	*	0
6. Waste Characteristics	100	0
Targets		
7. Nearest Individual	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	0.00E+00
10. Sensitive Environments		
10a. Actual Contamination	***	0.00E+00
10b. Potential Contamination	***	0.00E+00
10c. Sens. Environments (lines 10a+10b)	***	0.00E+00
11. Targets (lines 7+8d+9+10c)	**	0.00E+00
AIR MIGRATION PATHWAY SCORE (Sa)	100	0.00E+00

* Maximum value applies to waste characteristics category.

** Maximum value not applicable.

*** No specific maximum value applies, see HRS for details.

PREscore 2.0 - PRESCORE.TCL File 05/11/93
WASTE QUANTITY
Delta Shipyard - 12/20/94

PAGE: 9

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Pit 1

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID	Pit 1
b. Source Type	Surface Impoundment
c. Secondary Source Type	N.A.
d. Source Vol.(yd3/gal) Source Area (ft2)	0.00 18750.00
e. Source Volume/Area Value	1.44E+03
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00
g. Data Complete?	NO
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00
i. Data Complete?	NO
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	1.44E+03

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Arsenic	< 2	NO	2.2E+01	ppm
Cadmium	< 2	NO	4.9E+00	ppm
Chromium	< 2	NO	5.3E+02	ppm
Chrysene	< 2	NO	1.2E+00	ppm
DDD	< 2	NO	3.5E-02	ppm
Lead	< 2	NO	6.3E+02	ppm
Mercury	< 2	NO	1.3E+00	ppm
Methoxychlor	< 2	NO	6.9E-02	ppm
Selenium	< 2	NO	3.7E-01	ppm

Documentation for Source Type:

According to site observations and file information, the waste source areas are surface impoundments/pits.

Reference: 3

PREscore 2.0 - PRESCORE.TCL File 05/11/93
WASTE QUANTITY
Delta Shipyard - 12/20/94

PAGE: 11

Documentation for Source Hazardous Substances:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Area:

Area taken from the Wink Engineering sketch of the pits.

Reference: 3

PREscore 2.0 - PRESCORE.TCL File 05/11/93
WASTE QUANTITY
Delta Shipyard - 12/20/94

PAGE: 12

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Pit 2

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

WASTE QUANTITY

Delta Shipyard - 12/20/94

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID	Pit 2
b. Source Type	Surface Impoundment
c. Secondary Source Type	N.A.
d. Source Vol.(yd3/gal) Source Area (ft2)	0.00 60000.00
e. Source Volume/Area Value	4.62E+03
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00
g. Data Complete?	NO
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00
i. Data Complete?	NO
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	4.62E+03

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Benzene	< 2	NO	7.3E-01	ppm
Ethyl benzene	< 2	NO	1.7E-01	ppm
Mercury	< 2	NO	2.2E-01	ppm
Methyl Napthalene, 2-	< 2	NO	4.7E+01	ppm
Naphthalene	< 2	NO	1.1E+01	ppm
Phenanthrene	< 2	NO	8.8E+00	ppm
Xylene, m-	< 2	NO	2.4E-01	ppm

Documentation for Source Type:

According to site observations and file information, the waste source areas are surface impoundments/pits.

Reference: 3

Documentation for Source Hazardous Substances:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Area:

Areas are taken from the Wink Engineering Report Sketch.

Reference: 3

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Pit 3

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID	Pit 3
b. Source Type	Surface Impoundment
c. Secondary Source Type	N.A.
d. Source Vol.(yd3/gal) Source Area (ft2)	0.00 48750.00
e. Source Volume/Area Value	3.75E+03
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00
g. Data Complete?	NO
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00
i. Data Complete?	NO
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	3.75E+03

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Cadmium	< 2	NO	1.8E+00	ppm
Mercury	< 2	NO	2.3E-01	ppm
Selenium	< 2	NO	3.1E-01	ppm

Documentation for Source Type:

According to site observations and file information, the waste sources are surface impoundments/pits.

Reference: 3

PREscore 2.0 - PRESCORE.TCL File 05/11/93
WASTE QUANTITY
Delta Shipyard - 12/20/94

PAGE: 17

Documentation for Source Hazardous Substances:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Area:

Area is taken from Wink Engineering Report sketch.

Reference: 3

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Pit 4

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

WASTE QUANTITY

Delta Shipyard - 12/20/94

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID	Pit 4
b. Source Type	Surface Impoundment
c. Secondary Source Type	N.A.
d. Source Vol.(yd3/gal) Source Area (ft2)	0.00 167400.00
e. Source Volume/Area Value	1.29E+04
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00
g. Data Complete?	NO
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00
i. Data Complete?	NO
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	1.29E+04

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Arsenic	< 2	NO	3.0E+01	ppm
Barium	< 2	NO	1.9E+04	ppm
Cadmium	< 2	NO	2.6E+00	ppm
Chromium	< 2	NO	8.7E+01	ppm
Mercury	< 2	NO	7.7E-01	ppm
Zinc	< 2	NO	6.7E+02	ppm

Documentation for Source Type:

According to site observations and file information, the waste sources are surface impoundments/pits.

Reference: 3

Documentation for Source Hazardous Substances:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Area:

Areas are taken from the Wink Engineering Report sketch.

Reference: 3

WASTE QUANTITY
Delta Shipyard - 12/20/94

3. SITE HAZARDOUS WASTE QUANTITY SUMMARY

No. Source ID	Migration Pathways	Vol. or Area Value (2e)	Constituent or Wastestream Value (2f,2h)	Hazardous Waste Qty. Value (2k)
1 Pit 1	GW-SW-SE	1.44E+03	0.00E+00	1.44E+03
2 Pit 2	GW-SW-SE	4.62E+03	0.00E+00	4.62E+03
3 Pit 3	GW-SW-SE	3.75E+03	0.00E+00	3.75E+03
4 Pit 4	GW-SW-SE	1.29E+04	0.00E+00	1.29E+04

WASTE QUANTITY

Delta Shipyard - 12/20/94

4. PATHWAY HAZARDOUS WASTE QUANTITY AND WASTE CHARACTERISTICS SUMMARY TABLE

Migration Pathway	Contaminant Values		HWQVs*	WCVs**
Ground Water	Toxicity/Mobility	2.00E+03	10000	56
SW: Overland Flow, DW	Tox./Persistence	1.00E+04	10000	100
SW: Overland Flow, HFC	Tox./Persis./Bioacc.	5.00E+08	10000	1000
SW: Overland Flow, Env	Etox./Persis./Bioacc.	5.00E+08	10000	1000
SW: GW to SW, DW	Tox./Persistence	2.00E+03	10000	56
SW: GW to SW, HFC	Tox./Persis./Bioacc.	1.00E+07	10000	560
SW: GW to SW, Env	Etox./Persis./Bioacc.	2.00E+06	10000	320
Soil Exposure: Resident	Toxicity	1.00E+04	10000	100
Soil Exposure: Nearby	Toxicity	1.00E+04	10000	100
Air	Toxicity/Mobility	0.00E+00	0	0

* Hazardous Waste Quantity Factor Values

** Waste Characteristics Factor Category Values

Note: SW = Surface Water
 GW = Ground Water
 DW = Drinking Water Threat
 HFC = Human Food Chain Threat
 Env = Environmental Threat

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY AQUIFER SUMMARY
Delta Shipyard - 12/20/94

PAGE: 23

No. Aquifer ID	Type	Overlaying No.	Inter- Connected with	Likelihood of Release	Targets
1	Non K	0	0	430	0.00E+00

Containment

No.	Source ID	HWQ Value	Containment Value
1	Pit 1	1.44E+03	10
2	Pit 2	4.62E+03	10
3	Pit 3	3.75E+03	10
4	Pit 4	1.29E+04	10

=====
Containment Factor 10

Documentation for Ground Water Containment, Source Pit 1:

The is no documentation of liners on the pits and there is evidence of migration of hazardous constituents from the pits.

Reference: 1, 4

Documentation for Ground Water Containment, Source Pit 2:

There is no documentation of liners on the pits and there is evidence of hazardous substance migration.

Reference: 1, 4

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY AQUIFER SUMMARY
Delta Shipyard - 12/20/94

PAGE: 24

Documentation for Ground Water Containment, Source Pit 3:

There is no documentation of liners for the pits and there is evidence of hazardous substance migration.

Reference: 1, 4

Documentation for Ground Water Containment, Source Pit 4:

There is no documentation liners for the pits and there is evidence of hazardous substance migration.

Reference: 1, 4

Net Precipitation

Net Precipitation (inches)

6

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY LIKELIHOOD OF RELEASE AQUIFER
Delta Shipyard - 12/20/94

PAGE: 25

Aquifer:

Type of Aquifer: Non Karst

Overlaying Aquifer: 0

Interconnected with: 0

OBSERVED RELEASE

No.	Well ID	Well Type	Distance (miles)	Level of Contamination

- N/A and/or data not specified				

=====

Observed Release Factor	0
-------------------------	---

POTENTIAL TO RELEASE

Containment

Containment Factor 10

Net Precipitation

Net Precipitation Factor 3

Depth to Aquifer

A. Depth of Hazardous Substances 0.00 feet

B. Depth to Aquifer from Surface 0.00 feet

C. Depth to Aquifer (B - A) 0.00 feet

Depth to Aquifer Factor 5

Travel Time

Are All Layers Karst? NO

Thickness of Layer(s) with Lowest Conductivity 0.00 feet

Hydraulic Conductivity (cm/sec) 0.0E-00

Travel Time Factor 35

=====

Potential to Release Factor 430

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 27

Source: 1 Pit 1

Source Hazardous Waste Quantity Value: 1442.31

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
-----	-----	-----	-----
Arsenic	10000	1.00E-02	1.00E+02
Cadmium	10000	2.00E-01	2.00E+03
Chromium	10000	1.00E-02	1.00E+02
Chrysene	100	2.00E-09	2.00E-07
DDD	100	2.00E-07	2.00E-05
Lead	10000	2.00E-05	2.00E-01
Mercury	10000	2.00E-05	2.00E-01
Methoxychlor	100	2.00E-07	2.00E-05
Selenium	100	1.00E-02	1.00E+00

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 28

Source: 2 Pit 2

Source Hazardous Waste Quantity Value: 4615.38

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
-----	-----	-----	-----
Benzene	100	1.00E+00	1.00E+02
Ethyl benzene	10	1.00E-02	1.00E-01
Mercury	10000	2.00E-05	2.00E-01
Methyl Napthalene, 2-	100	2.00E-01	2.00E+01
Naphthalene	100	2.00E-03	2.00E-01
Phenanthrene	100	2.00E-05	2.00E-03
Xylene, m-	1	1.00E-02	1.00E-02

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 29

Source: 3 Pit 3

Source Hazardous Waste Quantity Value: 3750.00

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
-----	-----	-----	-----
Cadmium	10000	2.00E-01	2.00E+03
Mercury	10000	2.00E-05	2.00E-01
Selenium	100	1.00E-02	1.00E+00

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 30

Source: 4 Pit 4

Source Hazardous Waste Quantity Value: 12876.92

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
-----	-----	-----	-----
Arsenic	10000	1.00E-02	1.00E+02
Barium	10	1.00E-02	1.00E-01
Cadmium	10000	2.00E-01	2.00E+03
Chromium	10000	1.00E-02	1.00E+02
Mercury	10000	2.00E-05	2.00E-01
Zinc	10	2.00E-03	2.00E-02

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 31

Hazardous Substances Found in an Observed Release

Well No.	Observed Release Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
-------------	---	-------------------	-------------------	--------------------------------

- N/A and/or data not specified

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 32

Toxicity/Mobility Value from Source Hazardous Substances:	2.00E+03
Toxicity/Mobility Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility Factor:	2.00E+03
Sum of Source Hazardous Waste Quantity Values:	2.27E+04
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	56

PREscore 2.0 - PRESCORE.TCL File 05/11/93
GROUND WATER PATHWAY TARGETS FOR AQUIFER
Delta Shipyard - 12/20/94

PAGE: 33

Population by Well

No.	Well ID	Sample Type	Distance (miles)	Level of Contamination	Population
-----	---------	-------------	---------------------	---------------------------	------------

- N/A and/or data not specified

Level I Population Factor: 0.00

Level II Population Factor: 0.00

Potential Contamination by Distance Category

Distance Category (miles)	Population	Value
> 0 to 1/4	0.0	0.00E+00
> 1/4 to 1/2	0.0	0.00E+00
> 1/2 to 1	0.0	0.00E+00
> 1 to 2	0.0	0.00E+00
> 2 to 3	0.0	0.00E+00
> 3 to 4	0.0	0.00E+00

Potential Contamination Factor: 0.000

Nearest Well

Level of Contamination: N.A.

Nearest Well Factor: 0.00E+00

Resources

Resource Use: NO

Resource Factor: 0.00E+00

Wellhead Protection Area

No wellhead protection area

Wellhead Protection Area Factor: 0.00E+00

PREscore 2.0 - PRESCORE.TCL File 05/11/93
SURFACE WATER PATHWAY SEGMENT SUMMARY
Delta Shipyard - 12/20/94

PAGE: 35

No.	Segment ID	Segment Type	Water Type	Start Point (mi)	End Point (mi)	Average Flow (cfs)
1	Bayou La Carpe	River	Fresh	0.00	0.60	50
2	H. Navigat. Canal	Mixing Are	Fresh	0.60	15.00	500

Documentation for segment: Bayou La Carpe:

Bayou La Carpe is a small perennial flowing bayou which surrounds the industrial park.

Reference: 6

Documentation for segment: H. Navigat. Canal:

The Houma Navigational canal is part of the Intercoastal waterway and sustains heavy marine traffic. The canal is tidally influenced and has a problem with salt water intrusion.

Reference: 7

OBSERVED RELEASE

No. Sample ID	Sample Type	Distance (miles)	Level of Contamination DW HFC Env
----- - N/A and/or data not specified			

=====

Observed Release Factor	0
-------------------------	---

Documentation for Observed Release, Sample SED 5/SED 6:

Sample was collected on 22 August 1994 in the drainage ditch approximately 10 south of the overflow pipe on Pit 2. SED-6 is a duplicate of SED-5. Samples were taken at 10:00 A.M.

Reference: 1, 4

POTENTIAL TO RELEASE

Potential to Release by Overland Flow

Containment

No.	Source ID	HWQ Value	Containment Value
1	Pit 1	1.44E+03	10
2	Pit 2	4.62E+03	10
3	Pit 3	3.75E+03	10
4	Pit 4	1.29E+04	10

=====

Containment Factor: 10

Documentation for Overland Flow Containment, Source Pit 1:

There is evidence of hazardous substance migration from the pit.

Reference: 1, 4

Documentation for Overland Flow Containment, Source Pit 2:

There is evidence of hazardous substance migration from the pit.

Reference: 1, 4

Documentation for Overland Flow Containment, Source Pit 3:

There is evidence of hazardous substance migration from the pits.

Reference: 1, 4

Documentation for Overland Flow Containment, Source Pit 4:

There is evidence of hazardous substance migration from the pits.

Reference: 1, 4

Distance to Surface Water

Distance to Surface Water:	400.0 feet
Distance to Surface Water Factor:	20

Documentation for Distance to Surface Water:

Distance to surface water is an estimate based on observations and topographical maps.

Reference: 4

Runoff

A. Drainage Area:	10.0 acres
B. 2-year, 24-hour Rainfall:	5.5 inches

Documentation for Rainfall:

Reference: 5

C. Soil Group:	D
Fine-textured soils with very low infiltration rates	

Documentation for Soil Group:

Several borings were completed in the general vicinity of the pits
and the subsurface soils had permeabilities of 10^{-7} to 10^{-8} cm/sec.

Reference: 2

Runoff Factor: 1

=====

Potential to Release by Overland Flow Factor: 210

Potential to Release by Flood

No.	Source ID	HWQ Value	Flood Containment Value	Flood Frequency Value	Potential to Release by Flood
1	Pit 1	1.44E+03	10	25	250
2	Pit 2	4.62E+03	10	25	250
3	Pit 3	3.75E+03	10	25	250
4	Pit 4	1.29E+04	10	25	250

=====
 Potential to Release by Flood Factor: 250

Documentation for Flood Containment, Source Pit 1:

There is no evidence that the source is contained against a flood.

Reference:

Documentation for Flood Frequency, Source Pit 1:

The site is reported to be in the 100-year flood plain.

Reference: 2

Documentation for Flood Containment, Source Pit 2:

There is no evidence that the pits are contained against floods.

Reference:

Documentation for Flood Frequency, Source Pit 2:

Reference: 2

Documentation for Flood Containment, Source Pit 3:

There is no documentation or evidence of flood containment at the sites.

Reference:

Documentation for Flood Frequency, Source Pit 3:

Reference: 2

Documentation for Flood Containment, Source Pit 4:

There is no documentation of flood containment for the pits.

Reference:

Documentation for Flood Frequency, Source Pit 4:

Reference: 2

Source: 1 Pit 1

Source Hazardous Waste Quantity Value: 1442.31

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
-----	-----	-----	-----
Arsenic	10000	1.00E+00	1.00E+04
Cadmium	10000	1.00E+00	1.00E+04
Chromium	10000	1.00E+00	1.00E+04
Chrysene	0	1.00E+00	0.00E+00
DDD	100	1.00E+00	1.00E+02
Lead	10000	1.00E+00	1.00E+04
Mercury	10000	1.00E+00	1.00E+04
Methoxychlor	100	1.00E+00	1.00E+02
Selenium	100	1.00E+00	1.00E+02

Source: 2 Pit 2

Source Hazardous Waste Quantity Value: 4615.38

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
-----	-----	-----	-----
Benzene	100	4.00E-01	4.00E+01
Ethyl benzene	10	4.00E-01	4.00E+00
Mercury	10000	1.00E+00	1.00E+04
Methyl Napthalene, 2-	0	4.00E-01	0.00E+00
Naphthalene	100	4.00E-01	4.00E+01
Phenanthrene	0	4.00E-01	0.00E+00
Xylene, m-	1	4.00E-01	4.00E-01

Source: 3 Pit 3

Source Hazardous Waste Quantity Value: 3750.00

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
-----	-----	-----	-----
Cadmium	10000	1.00E+00	1.00E+04
Mercury	10000	1.00E+00	1.00E+04
Selenium	100	1.00E+00	1.00E+02

Source: 4 Pit 4

Source Hazardous Waste Quantity Value: 12876.92

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
Arsenic	10000	1.00E+00	1.00E+04
Barium	10	1.00E+00	1.00E+01
Cadmium	10000	1.00E+00	1.00E+04
Chromium	10000	1.00E+00	1.00E+04
Mercury	10000	1.00E+00	1.00E+04
Zinc	10	1.00E+00	1.00E+01

Hazardous Substances Found in an Observed Release

Sample Observed Release No.	Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
--------------------------------	---------------------	-------------------	----------------------	-----------------------------------

- N/A and/or data not specified

Toxicity/Persistence Value from Source Hazardous Substances:	1.00E+04
Toxicity/Persistence Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Persistence Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	2.27E+04
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	100

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified

Level I Concentrations

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population

- N/A and/or data not specified		

=====

Population Served by Level I Intakes: 0.0

Level I Population Factor: 0.00E+00

Level II Concentrations

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population

- N/A and/or data not specified		

=====

Population Served by Level II Intakes: 0.0

Level II Population Factor: 0.00E+00

Potential Contamination

Intake ID	Average Annual Flow (cfs)	Population Served
-----	-----	-----
1 Houma 1	500	30000.0

Documentation for Intake Houma 1:

Houma and the surrounding area receives its water from the Houma water plant located at the conjunction of Bayou Black and the Houma Navigational Canal. The water plant pulls from the canal, but in times of saltwater intrusion, Bayou Black is used as a secondary source of water. The plant uses a sulfate treatment on the water. The Houma water plant reservoir is approximately 2.55 miles upstream of the PPE at the Delta Shipyards site. Bryan Sampey, Houma Water Plant #3 Plant Manager, stated that the plant serves approximately 30,000 people.

Reference: 2, 6, 7

Type of Surface Water Body	Total Population	Dilution-Weighted Population
-----	-----	-----
3-mile Mixing Zone	30000.0	8163.0
=====	=====	=====
Dilution-Weighted Population Served by Potentially Contaminated Intakes:	8163.0	
Potential Contamination Factor:		816.0

Nearest Intake

Location of Nearest Drinking Water Intake: Houma 1
Distance from the Probable Point of Entry: 2.55 miles
Type of Surface Water Body: Mixing Are
Dilution Weight: 0.5000000
Highest Level of Contamination: Potential

Nearest Intake Factor: 10.00

Documentation for Houma 1:

Houma and the surrounding area recieves its water from the Houma water plant located at the conjunction of Bayou Black and the Houma Navigational Canal. The water plant pulls from the canal, but in times of saltwater intrusion, Bayou Black is used as a secondary source of water. The plant uses a sulfate treatment on the water. The Houma water plant reservoir is approximately 2.55 miles upstream of the PPE at the Delta Shipyards site. Bryan Sampey, Houma Water Plant #3 Plant Manager, stated that the plant serves approximately 30,000 people.

Reference: 2, 6, 7

Resources

Resource Use: NO

Resource Value: 0.00E+00

Source: 1 Pit 1

Source Hazardous Waste Quantity Value: 1442.31

Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Persistence/ Bioaccum. Value
-----	-----	-----	-----	-----
Arsenic	10000	1.00E+00	5.00E+00	5.00E+04
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Chrysene	0	1.00E+00	5.00E+02	0.00E+00
DDD	100	1.00E+00	5.00E+04	5.00E+06
Lead	10000	1.00E+00	5.00E+01	5.00E+05
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Methoxychlor	100	1.00E+00	5.00E+04	5.00E+06
Selenium	100	1.00E+00	5.00E+03	5.00E+05

Source: 2 Pit 2

Source Hazardous Waste Quantity Value: 4615.38

Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Persistence/ Bioaccum. Value
-----	-----	-----	-----	-----
Benzene	100	4.00E-01	5.00E+03	2.00E+05
Ethyl benzene	10	4.00E-01	5.00E+01	2.00E+02
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Methyl Napthalene, 2-	0	4.00E-01	5.00E+03	0.00E+00
Naphthalene	100	4.00E-01	5.00E+02	2.00E+04
Phenanthrene	0	4.00E-01	5.00E+01	0.00E+00
Xylene, m-	1	4.00E-01	5.00E+02	2.00E+02

Source: 3 Pit 3

Source Hazardous Waste Quantity Value: 3750.00

Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Persistence/ Bioaccum. Value
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Selenium	100	1.00E+00	5.00E+03	5.00E+05

Source: 4 Pit 4

Source Hazardous Waste Quantity Value: 12876.92

Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Persistence/ Bioaccum. Value
Arsenic	10000	1.00E+00	5.00E+00	5.00E+04
Barium	10	1.00E+00	5.00E-01	5.00E+00
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Zinc	10	1.00E+00	5.00E+02	5.00E+03

Hazardous Substances Found in an Observed Release

Sample Observed Release	Toxicity	Persistence	Bio-	Toxicity/
No. Hazardous Substance	Value	Value	accum.	Persistence/
			Value	Bioaccum.
				Value

- N/A and/or data not specified

Toxicity/Persistence/Bioaccumulation Value from Source Hazardous Substances:	5.00E+08
Toxicity/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Persistence/Bioaccumulation Factor:	5.00E+08
Sum of Source Hazardous Waste Quantity Values:	2.27E+04
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	1000

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

-
- N/A and/or data not specified

Most Distant Level II Sample

-
- N/A and/or data not specified

Level I Concentrations

Fishery	Annual Production (pounds)	Human Food Chain Population Value
---------	-------------------------------	--------------------------------------

- N/A and/or data not specified
=====

Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00

Level II Concentrations

Fishery	Annual Production (pounds)	Human Food Chain Population Value
---------	-------------------------------	--------------------------------------

- N/A and/or data not specified
=====

Sum of Human Food Chain Population Values: 0.00E+00

Level II Concentrations Factor: 0.00E+00

Potential Contamination

Fishery	Annnual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Value (Pi)	Dilution Weight (Di)	Pi*Di
1 Bayou La Carpe	10.0	River	50	0.0	1.00E-01	3.00E-03
2 H. Navigat. Canal	100.0	Mixing A	500	0.3	1.00E-02	3.00E-03

Sum of (Pi*Di): 6.00E-03

Potential Human Food Chain Contamination Factor: 6.00E-04

Documentation for Bayou La Carpe Fishery:

Mr. Gerald Adkins of the Louisiana Department of Fisheries and Wildlife stated that Bayou La Carpe and the Houma Navigational Canal are limited fisheries due to saltwater intrusion and marine traffic. A conservative estimate of 10 pounds per year is made for Bayou La Carpe due to its small nature.

Reference: 8

Documentation for H. Navigat. Canal Fishery:

Gerald Adkins of the Louisiana Department of Fisheries and Wildlife stated the Bayou La Carpe and the Houma Navigational Canal are limited fisheries due to saltwater intrusion and marine traffic. A conservative estimate of 100 pounds of fish annually is made for the Houma Navigational Canal due to its size.

Reference: 8

Food Chain Individual

Location of Nearest Fishery: Bayou La Carpe
Distance from the Probable Point of Entry: 0.00 miles
Type of Surface Water Body: River
Dilution Weight: 0.1000000
Level of Contamination: Potential

Food Chain Individual Factor: 2.00

Documentation for Bayou La Carpe:

Bayou La Carpe is a small perennial flowing bayou which surrounds the industrial park.

Reference: 6

Source: 1 Pit 1

Source Hazardous Waste Quantity Value: 1442.31

Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
-----	-----	-----	-----	-----
Arsenic	10	1.00E+00	5.00E+01	5.00E+02
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Chrysene	1000	1.00E+00	5.00E+03	5.00E+06
DDD	10000	1.00E+00	5.00E+04	5.00E+08
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Methoxychlor	10000	1.00E+00	5.00E+04	5.00E+08
Selenium	100	1.00E+00	5.00E+03	5.00E+05

Source: 2 Pit 2

Source Hazardous Waste Quantity Value: 4615.38

Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
-----	-----	-----	-----	-----
Benzene	10000	4.00E-01	5.00E+02	2.00E+06
Ethyl benzene	100	4.00E-01	5.00E+01	2.00E+03
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Methyl Napthalene, 2-	1000	4.00E-01	5.00E+03	2.00E+06
Naphthalene	1000	4.00E-01	5.00E+02	2.00E+05
Phenanthrene	1000	4.00E-01	5.00E+03	2.00E+06
Xylene, m-	100	4.00E-01	5.00E+02	2.00E+04

Source: 3 Pit 3

Source Hazardous Waste Quantity Value: 3750.00

Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
-----	-----	-----	-----	-----
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Selenium	100	1.00E+00	5.00E+03	5.00E+05

Source: 4 Pit 4

Source Hazardous Waste Quantity Value: 12876.92

Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
-----	-----	-----	-----	-----
Arsenic	10	1.00E+00	5.00E+01	5.00E+02
Barium	1	1.00E+00	5.00E-01	5.00E-01
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chromium	10000	1.00E+00	5.00E+00	5.00E+04
Mercury	10000	1.00E+00	5.00E+04	5.00E+08
Zinc	10	1.00E+00	5.00E+02	5.00E+03

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
---------------	---	---------------------------	----------------------	-------------------------	--

- N/A and/or data not specified

Ecotoxicity/Persistence/Bioaccumulation Value from Source Hazardous Substances:	5.00E+08
Ecotoxicity/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	0.00E+00
Ecotoxicity/Persistence/Bioaccumulation Factor:	5.00E+08
Sum of Source Hazardous Waste Quantity Values:	2.27E+04
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	1000

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified

Level I Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value

- N/A and/or data not specified		

 Sum of Sensitive Environments Values: 0

Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)

- N/A and/or data not specified		

 Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

=====
 Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level I Concentrations Factor: 0.00E+00

Level II Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value

- N/A and/or data not specified		

 Sum of Sensitive Environments Values: 0

Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)

- N/A and/or data not specified		

 Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

=====

Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level II Concentrations Factor: 0.00E+00

Potential Contamination

Sensitive Environments

Type of Surface		Sensitive Environment
Water Body	Sensitive Environment	Value

Wetlands

Type of Surface		Wetlands	Wetlands
Water Body	Sensitive Environment	Frontage	Value

Mixing Area	1 wetlands	15.00	350

Documentation for Sensitive Environment wetlands:

The 15 miles of wetlands frontage is an estimate based on Houma, La 7.5 minute wetlands map and the New Orleans 1:100,000 topographical map.

Reference:

Type of Surface	Sum of Sens. Environment Values(Sj)	Sum of Wetland Frontage Values(Wj)	Dilution Weight (Dj)	Dj(Wj+Sj)
Water Body				
Moderate to Large Stream	0	350	1.00E-02	3.50E+00

Sum of Dj(Wj+Sj): 3.50E+00
 Sum of Dj(Wj+Sj)/10: 3.50E-01

=====
 Potential Contamination Sensitive Environment Factor: 3.50E-01

Likelihood of Exposure

No.	Source ID	Level of Contamination
1	Pit 1	Level I
2	Pit 2	Level II
3	Pit 3	Level II
4	Pit 4	Level I
Likelihood of Exposure Factor: 550		

Documentation for Area of Contamination, Source Pit 1:

Reference: 3

Documentation for Area of Contamination, Source Pit 2:

Reference: 3

Documentation for Area of Contamination, Source Pit 3:

Reference: 3

Documentation for Area of Contamination, Source Pit 4:

Reference: 3

Source No.	Hazardous Substance	Depth (ft.)	Concent.	Cancer	RFD	Units
1	Arsenic	< 2	2.2E+01	3.3E-01	1.7E+02	ppm
1	Cadmium	< 2	4.9E+00	0.0E+00	2.9E+02	ppm
1	Chromium	< 2	5.3E+02	0.0E+00	2.9E+03	ppm
1	Chrysene	< 2	1.2E+00	0.0E+00	0.0E+00	ppm
1	DDD	< 2	3.5E-02	2.4E+00	0.0E+00	ppm
1	Lead	< 2	6.3E+02	0.0E+00	0.0E+00	ppm
1	Mercury	< 2	1.3E+00	0.0E+00	1.7E+02	ppm
1	Methoxychlor	< 2	6.9E-02	0.0E+00	2.9E+03	ppm
1	Selenium	< 2	3.7E-01	0.0E+00	2.9E+03	ppm
2	Benzene	< 2	7.3E-01	2.0E+01	0.0E+00	ppm
2	Ethyl benzene	< 2	1.7E-01	0.0E+00	5.8E+04	ppm
2	Mercury	< 2	2.2E-01	0.0E+00	1.7E+02	ppm
2	Methyl Napthalene, 2-	< 2	4.7E+01	0.0E+00	0.0E+00	ppm
2	Naphthalene	< 2	1.1E+01	0.0E+00	2.3E+04	ppm
2	Phenanthrene	< 2	8.8E+00	0.0E+00	0.0E+00	ppm
2	Xylene, m-	< 2	2.4E-01	0.0E+00	1.2E+06	ppm
3	Cadmium	< 2	1.8E+00	0.0E+00	2.9E+02	ppm
3	Mercury	< 2	2.3E-01	0.0E+00	1.7E+02	ppm
3	Selenium	< 2	3.1E-01	0.0E+00	2.9E+03	ppm
4	Arsenic	< 2	3.0E+01	3.3E-01	1.7E+02	ppm
4	Barium	< 2	1.9E+04	0.0E+00	4.1E+04	ppm
4	Cadmium	< 2	2.6E+00	0.0E+00	2.9E+02	ppm
4	Chromium	< 2	8.7E+01	0.0E+00	2.9E+03	ppm
4	Mercury	< 2	7.7E-01	0.0E+00	1.7E+02	ppm
4	Zinc	< 2	6.7E+02	0.0E+00	1.7E+05	ppm

Documentation for Source Pit 1, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Pit 2, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Pit 3, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Pit 4, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Source: 1 Pit 1

Source Hazardous Waste Quantity Value: 1442.31

Hazardous Substance	Toxicity Value
Arsenic	10000
Cadmium	10000
Chromium	10000
Chrysene	0
DDD	100
Lead	10000
Mercury	10000
Methoxychlor	100
Selenium	100

Source: 2 Pit 2

Source Hazardous Waste Quantity Value: 4615.38

Hazardous Substance	Toxicity Value
Benzene	100
Ethyl benzene	10
Mercury	10000
Methyl Napthalene, 2-	0
Naphthalene	100
Phenanthrene	0
Xylene, m-	1

Source: 3 Pit 3

Source Hazardous Waste Quantity Value: 3750.00

Hazardous Substance	Toxicity Value
Cadmium	10000
Mercury	10000
Selenium	100

Source: 4 Pit 4

Source Hazardous Waste Quantity Value: 12876.92

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Cadmium	10000
Chromium	10000
Mercury	10000
Zinc	10

Toxicity Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	2.27E+04
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	100

PREscore 2.0 - PRESCORE.TCL File 05/11/93
SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT TARGETS
Delta Shipyard - 12/20/94

PAGE: 84

Targets

Level I Population:	0.0	Value:	0.00
Level II Population:	0.0	Value:	0.00
Workers:	20.0	Value:	5.00

Documentation for Workers:

Elevated Boats Industries has approximately 20 workers onsite.

Reference: 4

Resident Individual:	Potentia	Value:	0.00
Resources:	NO	Value:	0.00

Terrestrial Sensitive Environment	Value
-----------------------------------	-------

- N/A and/or data not specified

=====

Terrestrial Sensitive Environments Factor: 0.00

Documentation for Attractiveness/Accessibility, Source Pit 3:

The site is accessible, however, it is located in an industrial park and has little or no recreational value.

Reference:

Documentation for Attractiveness/Accessibility, Source Pit 4:

The site is accessible, however, it is located in an industrial park and has little or no recreational value.

Reference: 1, 4

Source Hazardous Substance No.	Depth (ft.)	Concent.	Cancer	RFD	Units
1 Arsenic	< 2	2.2E+01	3.3E-01	1.7E+02	ppm
1 Cadmium	< 2	4.9E+00	0.0E+00	2.9E+02	ppm
1 Chromium	< 2	5.3E+02	0.0E+00	2.9E+03	ppm
1 Chrysene	< 2	1.2E+00	0.0E+00	0.0E+00	ppm
1 DDD	< 2	3.5E-02	2.4E+00	0.0E+00	ppm
1 Lead	< 2	6.3E+02	0.0E+00	0.0E+00	ppm
1 Mercury	< 2	1.3E+00	0.0E+00	1.7E+02	ppm
1 Methoxychlor	< 2	6.9E-02	0.0E+00	2.9E+03	ppm
1 Selenium	< 2	3.7E-01	0.0E+00	2.9E+03	ppm
2 Benzene	< 2	7.3E-01	2.0E+01	0.0E+00	ppm
2 Ethyl benzene	< 2	1.7E-01	0.0E+00	5.8E+04	ppm
2 Mercury	< 2	2.2E-01	0.0E+00	1.7E+02	ppm
2 Methyl Napthalene, 2-	< 2	4.7E+01	0.0E+00	0.0E+00	ppm
2 Napthalene	< 2	1.1E+01	0.0E+00	2.3E+04	ppm
2 Phenanthrene	< 2	8.8E+00	0.0E+00	0.0E+00	ppm
2 Xylene, m-	< 2	2.4E-01	0.0E+00	1.2E+06	ppm
3 Cadmium	< 2	1.8E+00	0.0E+00	2.9E+02	ppm
3 Mercury	< 2	2.3E-01	0.0E+00	1.7E+02	ppm
3 Selenium	< 2	3.1E-01	0.0E+00	2.9E+03	ppm
4 Arsenic	< 2	3.0E+01	3.3E-01	1.7E+02	ppm
4 Barium	< 2	1.9E+04	0.0E+00	4.1E+04	ppm
4 Cadmium	< 2	2.6E+00	0.0E+00	2.9E+02	ppm
4 Chromium	< 2	8.7E+01	0.0E+00	2.9E+03	ppm
4 Mercury	< 2	7.7E-01	0.0E+00	1.7E+02	ppm
4 Zinc	< 2	6.7E+02	0.0E+00	1.7E+05	ppm

Likelihood of Exposure

No. Source ID	Level of Contamination	Attractiveness/ Accessibility	Area of Contam. (sq. feet)
1 Pit 1	Level I	10	18750
2 Pit 2	Level II	10	60000
3 Pit 3	Level II	10	48750
4 Pit 4	Level I	10	167400

Highest Attractiveness/Accessibility Value:		10	
Sum of Eligible Areas Of Contamination (sq. feet):			294900
Area of Contamination Value: 60			

Likelihood of Exposure Factor Category: 25

Documentation for Attractiveness/Accessibility, Source Pit 1:

The area is accesible, however, it is located in an industrial park and has little recreational value.

Reference:

Documentation for Attractiveness/Accessibility, Source Pit 2:

The site is accessible, however it is located within an industrial park and has little if any use recreational value.

Reference:

Documentation for Source Pit 1, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Pit 2, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Pit 3, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Documentation for Source Pit 4, Contaminants:

Samples were collected on 22 August 1994.

Reference: 1

Source: 1 Pit 1

Source Hazardous Waste Quantity Value: 1442.31

Hazardous Substance	Toxicity Value
Arsenic	10000
Cadmium	10000
Chromium	10000
Chrysene	0
DDD	100
Lead	10000
Mercury	10000
Methoxychlor	100
Selenium	100

Source: 2 Pit 2

Source Hazardous Waste Quantity Value: 4615.38

Hazardous Substance	Toxicity Value
Benzene	100
Ethyl benzene	10
Mercury	10000
Methyl Napthalene, 2-	0
Napthalene	100
Phenanthrene	0
Xylene, m-	1

Source: 3 Pit 3

Source Hazardous Waste Quantity Value: 3750.00

Hazardous Substance	Toxicity Value
Cadmium	10000
Mercury	10000
Selenium	100

Source: 4 Pit 4

Source Hazardous Waste Quantity Value: 12876.92

Hazardous Substance	Toxicity Value
Arsenic	10000
Barium	10
Cadmium	10000
Chromium	10000
Mercury	10000
Zinc	10

Toxicity Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	2.27E+04
Hazardous Waste Quantity Factor:	10000
Waste Characteristics Factor Category:	100

Nearby Individual

Population within 1/4 mile: 0.0

Nearby Individual Value: 0.0

Population Within 1 Mile

Travel Distance Category Number of People Value

> 0 to 1/4 mile 0.0 0.0
> 1/4 to 1/2 mile 15.0 0.0
> 1/2 to 1 mile 3578.0 3.3

Population Within 1 Mile Factor: 3.0

Documentation for Population > 1/4 to 1/2 mile Distance Category:

These values are taken from the 1990 GEMS data base for the Delta Shipyards site.

Reference: 9

Documentation for Population > 1/2 to 1 mile Distance Category:

This informations is taken from the 1990 GEMS database for the Delta Shipyards site.

Reference: 9

PREscore 2.0 - PRESCORE.TCL File 05/11/93
AIR PATHWAY LIKELIHOOD OF RELEASE
Delta Shipyard - 12/20/94

PAGE: 94

OBSERVED RELEASE

No.	Sample ID	Distance (miles)	Level of Contamination

- N/A and/or data not specified			

=====

Observed Release Factor: 0

Gas Migration Potential

GAS POTENTIAL TO RELEASE

Source ID	Source Type	Gas Contain. Value (A)	Gas Source Type Value (B)	Gas Migrtn. Potent. Value (C)	Sum (B+C)	Gas Potential to Rel. Value A(B+C)

- N/A and/or data not specified						

Gas Potential to Release Factor: 0

Documentation for Gas Containment, Source Pit 1:

The air pathway was not evaluated during the SIP effort.

Reference:

Documentation for Source Type, Source Pit 1:

According to site observations and file information, the waste source areas are surface impoundments/pits.

Reference: 3

Documentation for Gas Containment, Source Pit 2:

The air pathway was not evaluated during the SIP process.

Reference:

Documentation for Source Type, Source Pit 2:

According to site observations and file information, the waste source areas are surface impoundments/pits.

Reference: 3

Documentation for Gas Containment, Source Pit 3:

The air pathway was not evaluated during this SIP effort.

Reference:

Documentation for Source Type, Source Pit 3:

According to site observations and file information, the waste sources are surface impoundments/pits.

Reference: 3

Documentation for Gas Containment, Source Pit 4:

The air pathway was not evaluated during this SIP effort.

Reference:

Documentation for Source Type, Source Pit 4:

According to site observations and file information, the waste sources are surface impoundments/pits.

Reference: 3

PREscore 2.0 - PRESCORE.TCL File 05/11/93
AIR PATHWAY LIKELIHOOD OF RELEASE
Delta Shipyard - 12/20/94

PAGE: 98

Source: Pit 1

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
Chrysene	6
DDD	6
Mercury	11
Methoxychlor	6

Average of Gas Migration Potential Value for 3 Hazardous Substances: 7.667

Gas Migration Potential Value From Table 6-7: 6

Source: Pit 2

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
Benzene	17
Ethyl benzene	17
Mercury	11
Naphthalene	11
Phenanthrene	11
Xylene, m-	17

Average of Gas Migration Potential Value for 3 Hazardous Substances: 17.000

Gas Migration Potential Value From Table 6-7: 17

Source: Pit 3

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
-----	-----
Mercury	11

Average of Gas Migration Potential Value for 3 Hazardous Substances: 11.000
=====

Gas Migration Potential Value From Table 6-7: 11

Source: Pit 4

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
-----	-----
Mercury	11

Average of Gas Migration Potential Value for 3 Hazardous Substances: 11.000
=====

Gas Migration Potential Value From Table 6-7: 11

Particulate Migration Potential

PARTICULATE POTENTIAL TO RELEASE

Source ID	Source Type	Partic.	Partic.	Partic.	Sum (B+C)	Partic.
		Contain.	Source	Migrtn.		Potential
		Value	Type	Potent.		to Rel.
		(A)	(B)	(C)	(B+C)	A(B+C)

- N/A and/or data not specified						

Particulate Potential to Release Factor:

0

Documentation for Source Type, Source Pit 1:

According to site observations and file information, the waste source areas are surface impoundments/pits.

Reference: 3

Documentation for Source Type, Source Pit 2:

According to site observations and file information, the waste source areas are surface impoundments/pits.

Reference: 3

Documentation for Source Type, Source Pit 3:

According to site observations and file information, the waste sources are surface impoundments/pits.

Reference: 3

Documentation for Source Type, Source Pit 4:

According to site observations and file information, the waste sources are surface impoundments/pits.

Reference: 3

Source: Pit 1

Particulate Hazardous Substance

Arsenic
Cadmium
Chromium
Chrysene
DDD
Lead
Mercury
Methoxychlor
Selenium

Source: Pit 2

Particulate Hazardous Substance

Mercury

Methyl Napthalene, 2-

Naphthalene

Phenanthrene

PREscore 2.0 - PRESCORE.TCL File 05/11/93
AIR PATHWAY LIKELIHOOD OF RELEASE
Delta Shipyard - 12/20/94

PAGE: 106

Source: Pit 3

Particulate Hazardous Substance

Cadmium
Mercury
Selenium

Source: Pit 4

Particulate Hazardous Substance

Arsenic
Barium
Cadmium
Chromium
Mercury
Zinc

PREscore 2.0 - PRESCORE.TCL File 05/11/93
AIR PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 108

Hazardous Substance	Toxicity Value	Gas Mobility Value	Particulate Mobility Value	Toxicity/ Mobility Value

PREscore 2.0 - PRESCORE.TCL File 05/11/93
AIR PATHWAY WASTE CHARACTERISTICS
Delta Shipyard - 12/20/94

PAGE: 109

Hazardous Substances Found in an Observed Release

Sample Observed Release ID	Hazardous Substance	Particulate Toxicity/ Mobility Value	Gas Toxicity/ Mobility Value
-------------------------------	---------------------	--	------------------------------------

- N/A and/or data not specified

- N/A and/or data not specified

Toxicity/Mobility Value from Observed Release Hazardous
Substances:

0.00E+00

Toxicity/Mobility Factor:

0.00E+00

Sum of Source Hazardous Waste Quantity Values:

0.00E+00

Hazardous Waste Quantity Factor:

0

Waste Characteristics Factor Category:

0

AIR PATHWAY TARGETS

Delta Shipyard - 12/20/94

Actual Contamination

No. Sample ID	Distance (miles)	Level of Contamination
---------------	---------------------	------------------------

- N/A and/or data not specified

Potential Contamination

Distance Categories Subject
to Potential Contamination

Population

Value

Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000

doc here

Nearest Individual Factor

Distance in miles: Potentia

- N/A and/or data not specified

doc here

Resources

Resource Value: 0

doc here

Actual Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value

- N/A and/or data not specified		

Actual Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value

- N/A and/or data not specified		

=====

(Sum of Sensitive Environments + Wetlands Values)

Potential Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value	Distance Weight	Weighted Value/10
(null)	0.000	28496	9.08367202855371760	
Sum of Sensitive Environments Weighted Values/10:				0.000

Potential Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value	Distance Weight	Weighted Value/10
- N/A and/or data not specified				

=====

doc here

REFERENCES

Delta Shipyard - 12/20/94

1. CLP data package excerpts. Delta Shipyard.
2. The Earth Technology Corporation, Inc. 1984. Site Inspection Report of Delta Shipyard, Houma, Louisiana. 12 September 1984.
3. Wink Engineering. 1985. "Sampling Analyses and Report for Delta Shipyard, Houma, Louisiana. 5 July 1985.
4. Rung, P. 1994. Roy F. Weston, Inc. Field Log Notes. Site reconnaissance and sampling mission of Delta Shipyard, Houma, Louisiana. 7 July 1994 and 22 August 1994.
5. U.S. Department of Commerce. 1961. "2 Year, 24-Hour Rainfall Precipitation map for the United States". Technical Paper No. 40.
6. USGS (U.S. Geological). 1976 photorevised. Houma, La. (7.5 - minute quadrangle topographic maps).
7. Rung, P. 1994. WESTON. Personal Communication with Bryan Sampey, Plant Manager for Houma Water Plant #3. 9 November 1994.
8. Rung, P. 1994. WESTON. Personal Communication With Gerald Adkins-Fishery Biologist for the Louisiana Department of Fisheries and Wildlife, Houma, Louisiana. 9 November 1995.
9. EPA Region VI. 1990. Geographical Exposure Modeling System (GEMS), 1990 Census information.

REFERENCE 1



United States Environmental Protection Agency
Contract Laboratory Program

**Organic Traffic Report
& Chain of Custody Record**
(For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

96
5 22596

1. Project Code _____	Account Code _____	2. Region No. <u>VI</u>	Sampling Co. <u>WESTON</u>	4. Date Shipped <u>8/22/94</u>	Carrier <u>Federal Express</u>	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved																
Regional Information _____		Sampler (Name) <u>Pam Quackenbush</u>		Airbill Number <u>9878882996</u>																			
Non-Superfund Program _____		Sampler Signature <u>P. Quackenbush</u>		5. Ship To <u>Keystone Lab</u> <u>8300 West Park Drive</u> <u>Houston TX 77063</u> <u>(713) 266-6800</u> ATTN: <u>Dela Massondi</u>																			
Site Name <u>Delta Shipyard</u>		3. Purpose* <table border="0"><tr><td>Lead</td><td>Early Action</td><td>Long-Term Action</td></tr><tr><td><input checked="" type="checkbox"/> SF</td><td><input type="checkbox"/> CLEM</td><td><input type="checkbox"/> FS</td></tr><tr><td><input type="checkbox"/> PRP</td><td><input type="checkbox"/> PA</td><td><input type="checkbox"/> RD</td></tr><tr><td><input type="checkbox"/> ST</td><td><input type="checkbox"/> REM</td><td><input type="checkbox"/> RA</td></tr><tr><td><input type="checkbox"/> FED</td><td><input checked="" type="checkbox"/> SI</td><td><input type="checkbox"/> O&M</td></tr><tr><td></td><td><input type="checkbox"/> ESI</td><td><input type="checkbox"/> NPLD</td></tr></table>		Lead	Early Action			Long-Term Action	<input checked="" type="checkbox"/> SF	<input type="checkbox"/> CLEM	<input type="checkbox"/> FS	<input type="checkbox"/> PRP	<input type="checkbox"/> PA	<input type="checkbox"/> RD	<input type="checkbox"/> ST	<input type="checkbox"/> REM	<input type="checkbox"/> RA	<input type="checkbox"/> FED	<input checked="" type="checkbox"/> SI	<input type="checkbox"/> O&M		<input type="checkbox"/> ESI	<input type="checkbox"/> NPLD
Lead	Early Action	Long-Term Action																					
<input checked="" type="checkbox"/> SF	<input type="checkbox"/> CLEM	<input type="checkbox"/> FS																					
<input type="checkbox"/> PRP	<input type="checkbox"/> PA	<input type="checkbox"/> RD																					
<input type="checkbox"/> ST	<input type="checkbox"/> REM	<input type="checkbox"/> RA																					
<input type="checkbox"/> FED	<input checked="" type="checkbox"/> SI	<input type="checkbox"/> O&M																					
	<input type="checkbox"/> ESI	<input type="checkbox"/> NPLD																					
City, State <u>Houma LA</u>		Site Spill ID <u>22</u>																					

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier B = Blank S = Spike D = Duplicate R = Rinse PE = Perform. Eval. — = Not a QC Sample
					VOA	BNA	High only ARO/TOX						
FDB32	5	L	G	5	X	X	X	6-037729-31	SEP-1	8/22/94 0945	MFDP04	PJQ	—
FDB33	5	L	G	5	X	X	X	6-037733-35	SEP-2	8/22/94 1015	MFDP05	PJQ	—
FDB35	5	L	G	5	X	X	X	6-037737-39	SEP-3	8/22/94 1050	MFDP06	PJQ	—
FDB36	5	L	G	5	X	X	X	6-037741-43	SEP-4	8/22/94 0920	MFDP07	PJQ	—
FDB38	5	L	G	5	X	X	X	6-037745-47	SEP-5	8/22/94 1000	MFDP08	PJQ	—
FDB39	5	L	G	5	X	X	X	6-024907-09	SEP-6	8/22/94 1000	MFDP09	PJQ	(FDB38)
FDB41	5	L	G	5	X	X	X	6-024911-13	SEP-7	8/22/94 1100	MFDP10	PJQ	—
FDB27	5	L	G	5	X	X	X	6-037717-19	SS-1	8/22/94 1140	MFDP01	PJQ	—
FDB29	5	L	G	5	X	X	X	6-037721-23	SS-2	8/22/94 1051	MFDP02	PJQ	—
FDB30	5	L	G	5	X	X	X	6-037725-27	SS-3	8/22/94 1115	MFDP03	PJQ	—

Shipment for Case Complete? <u>(Y/N)</u>	Page <u>1</u> of <u>1</u>	Sample(s) to be Used for Laboratory QC <u>FDB32</u>	Additional Sampler Signatures <u>Dennis Hays</u>	Chain of Custody Seal Number(s) _____
--	---------------------------	--	---	--

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <u>P. Quackenbush</u>	Date / Time <u>8/22/94 1400</u>	Received by: (Signature) <u>Federal Express</u>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Blue - Region Copy
White - Lab Copy for Return to Region

Pink - SMO Copy
Yellow - Lab Copy for Return to SMO

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
SEE REVERSE FOR PURPOSE CODE DEFINITIONS

255676

COVER SHEET

LABORATORY RESPONSE TO RESULTS OF
CONTRACT COMPLIANCE SCREENING (CCS)

Response To: (Check One)

☒ Organic CCS

☐ Inorganic CCS

Response materials should be sent to the attention of the CCS Coordinator

Labcode:

K-71x

Response Date:

10-5-79

Date Screening

Results Received

in Laboratory:

10-5-79

EPA Contract No.

68-D2-0020

Case No.

22596

SDG No.

F0027

Sample Nos.

STDL

Only list sample numbers that require reconciliation

This form is used to identify materials sent in response to results of Contract Compliance Screening (CCS). A separate form must accompany the response for each SDG.

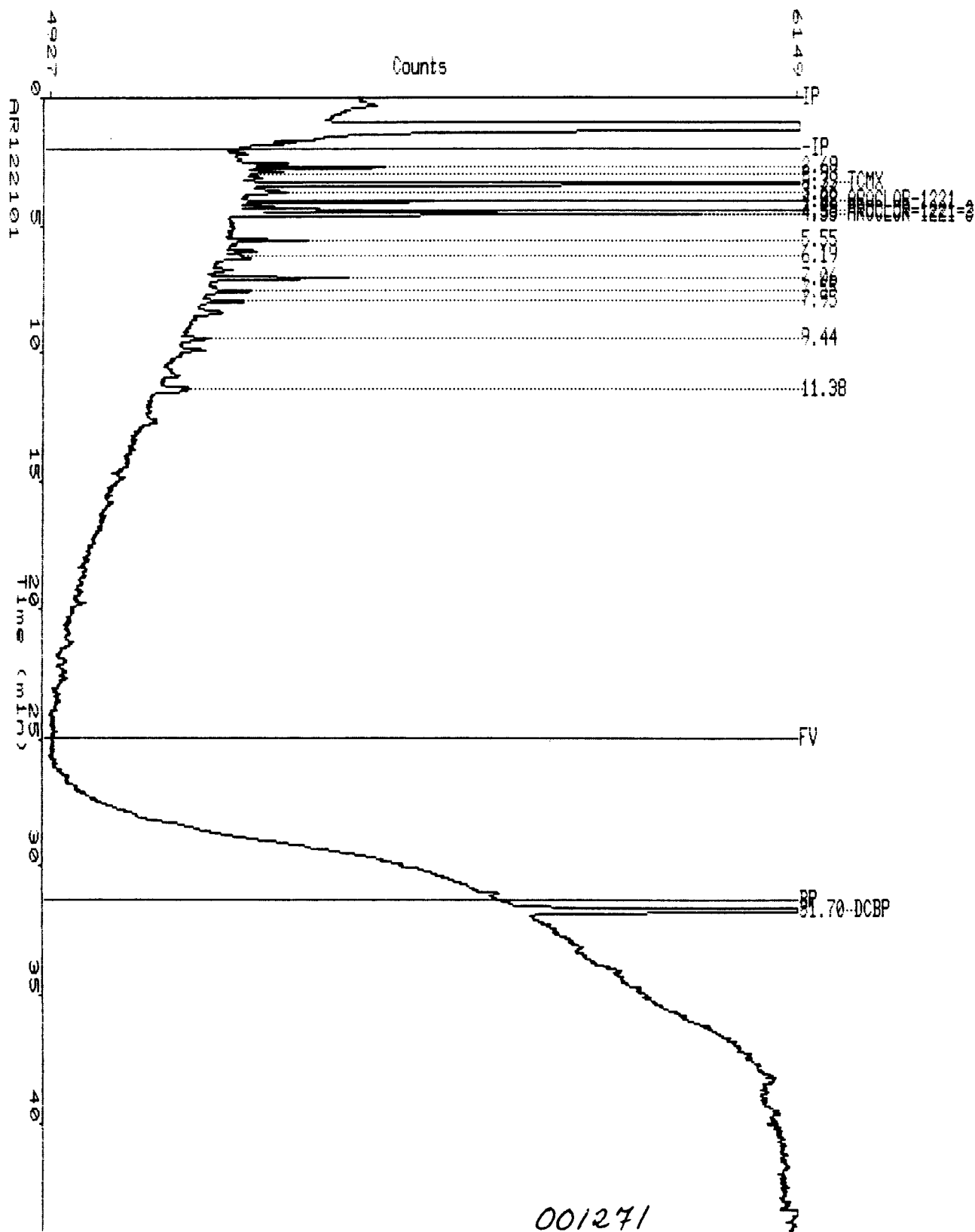
Please indicate (on the attached continuation form) which fractions and/or which criteria correspond with your resubmission. Response materials sent to CCS should also be copied to the Region and to EMSL/LV, each with this blue Cover Sheet.

Laboratory Response to Results of CCS

[illegible]

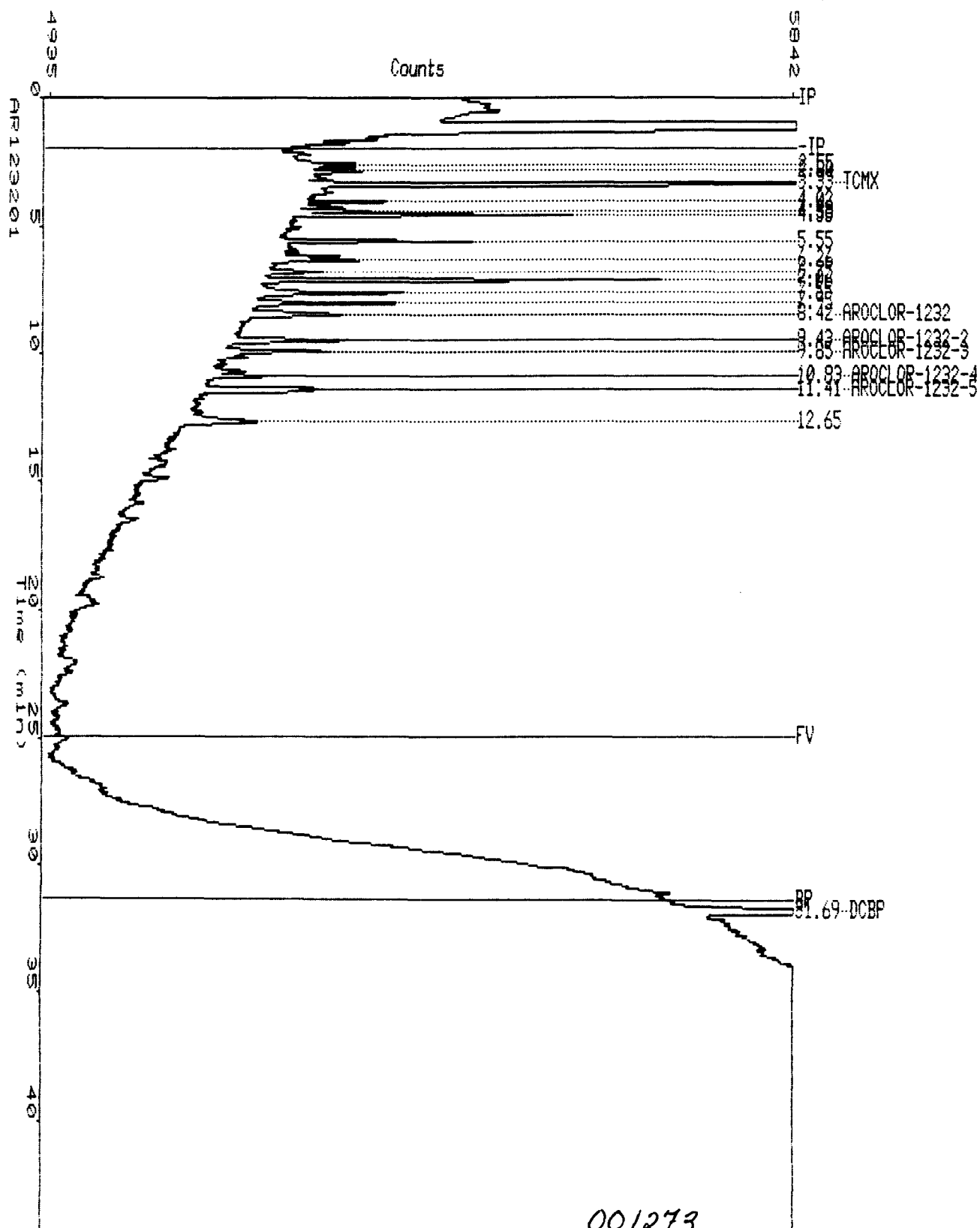
Data file: NAI\$DIR:INAI.BACKUP1\EAP0914-010
 Report: 471964
 Acquired: 14-SEP-1994 20:22:34
 Time range: 0.00-44.48

REVISED



EVA30A, P, P

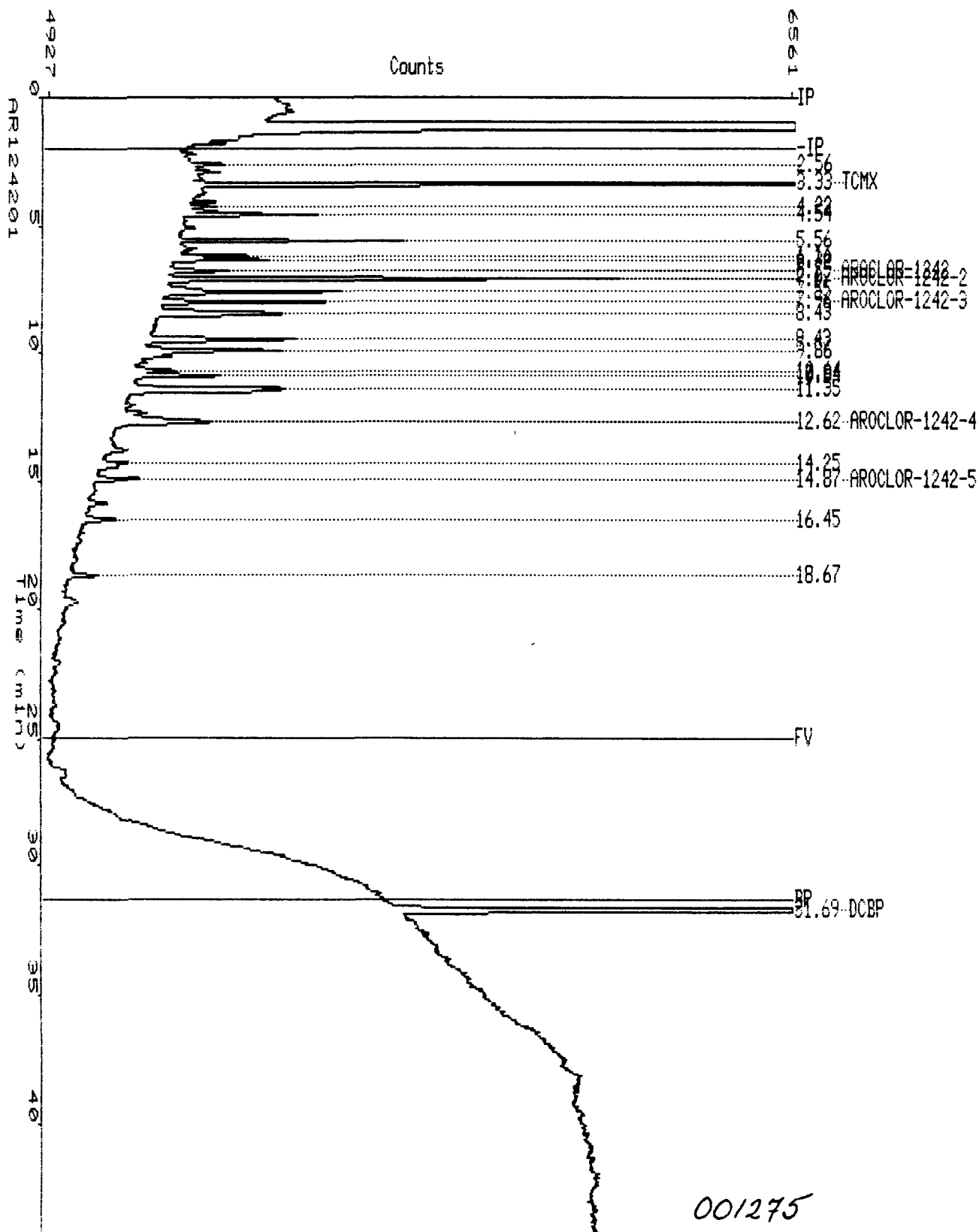
REVISED



EA30A, P, P

Data file: NAI\$DIR:[NAI.BACKUP1]EAP0914-012
 Report: 471975
 Acquired: 14-SEP-1994 21:59:12
 Time range: 0.00-44.48

REVISED

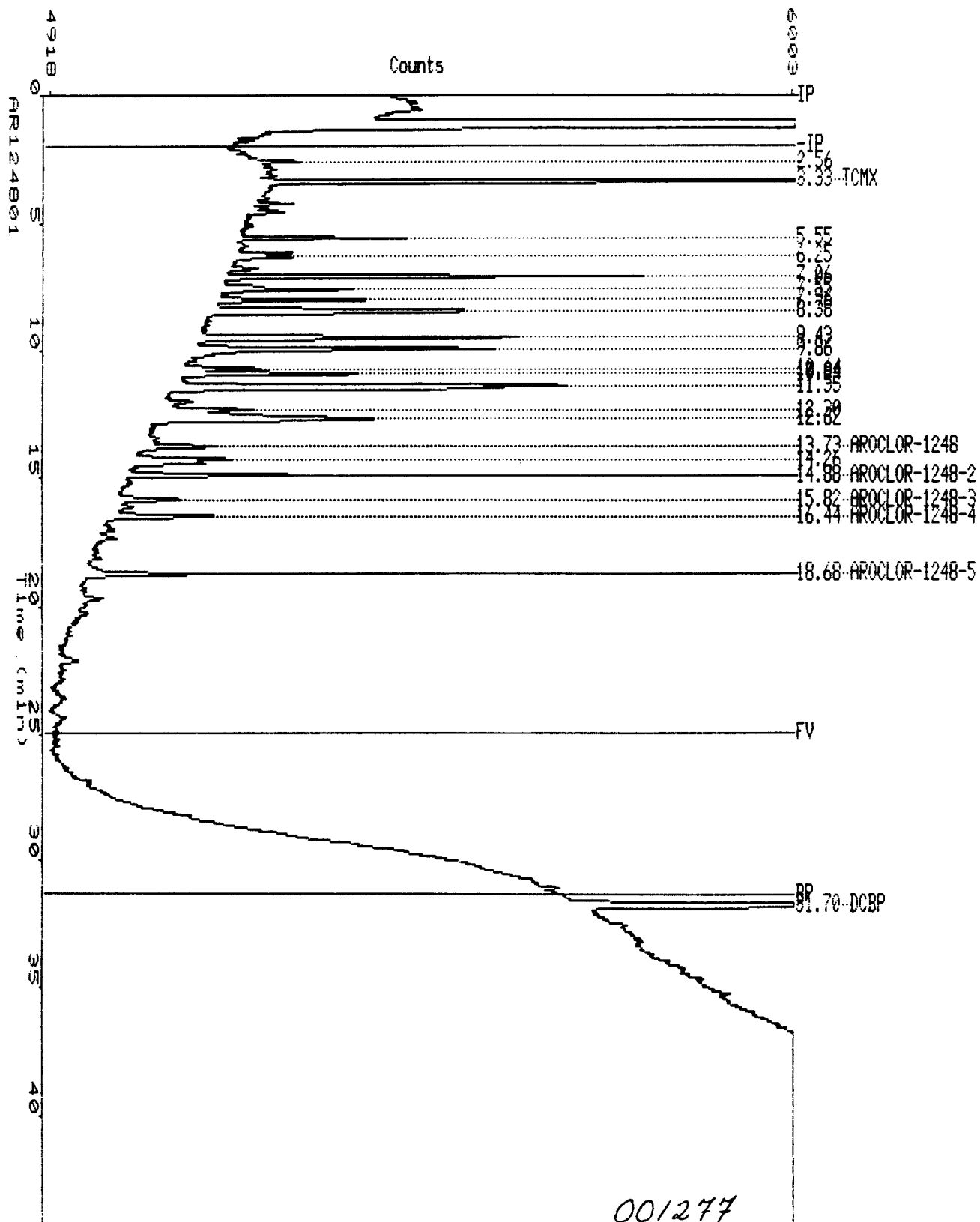


EVA30A, P, P

001275

Data file: NAI\$DIR:[NAI.BACKUP1]EAP0914-013
Report: 471979
Acquired: 14-SEP-1994 22:47:30
Time range: 0.00-44.48

REVISED



EVA30A, P, P

001277

REVISED



00/279

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME KEYSTONE LAB-HOUSTON

CITY/STATE HOUSTON, TEXAS

CASE NO. 22596 SDG NO. FDB-27 SDG NOS. TO FOLLOW _____
SAS NO. _____

CONTRACT NO. 68-D2-0020

SOW NO. 3-91

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III.)

	PAGE NOS		CHECK	
	FROM	TO	LAB	EPA
<u>Inventory Sheet (Form DC-2) (Do not number)</u>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>SDG Case Narrative</u>	<u>1</u>	<u>3</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>SDG Cover Sheet/Traffic Report</u>	<u>4</u>	<u>5</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Volatiles Data</u>				
a. QC Summary				
System Monitoring Compound Summary (Form II VOA)	<u>6</u>	<u>-</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	<u>7</u>	<u>-</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Method Blank Summary (Form IV VOA)	<u>8</u>	<u>9</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
GC/MS Instrument Performance Check (Form V VOA)	<u>10</u>	<u>13</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Internal Standard Area and RT Summary (Form VIII VOA)	<u>14</u>	<u>15</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
b. Sample Data	<u>16</u>	<u>144</u>		
TCL Results - (Form I VOA)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tentatively Identified Compounds (Form I VOA-TIC)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reconstructed total ion chromatograms (RIC) for each sample			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Quantitation reports			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mass spectra of all reported TICs with three best library matches			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
c. Standards Data (All Instruments)	<u>145</u>	<u>208</u>		
Initial Calibration Data (Form VI VOA)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RICs and Quan Reports for all Standards			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Continuing Calibration Data (Form VII VOA)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RICs and Quantitation Reports for all Standards			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
d. Raw QC Data				
BFB	<u>209</u>	<u>220</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Blank Data	<u>221</u>	<u>234</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Matrix Spike/Matrix Spike Duplicate Data	<u>235</u>	<u>242</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. <u>22596</u>	SDG NO. <u>FDB27</u>	SDG NOS. TO FOLLOW _____
SAS NO. _____		

PAGE NOS		CHECK	
FROM	TO	LAB	EPA

Semivolatiles Data

a. QC Summary

Surrogate Percent Recovery Summary (Form II SV)
 MS/MSD Summary (Form III SV)
 Method Blank Summary (Form IV SV)
 GC/MS Instrument Performance Check
 (Form V SV)
 Internal Standard Area and RT Summary
 (Form VIII SV)

<u>243</u>	—	—	—	—	—
<u>244</u>	—	—	—	—	—
<u>245</u>	—	—	—	—	—
<u>246</u>	<u>250</u>	—	—	—	—
<u>251</u>	<u>258</u>	—	—	—	—

b. Sample Data

TCL Results (Form I SV-1, SV-2)
 Tentatively Identified Compounds (Form I SV-TIC)
 Reconstructed total ion chromatograms (RIC)
 for each sample
 For each sample:
 Raw spectra and background-subtracted
 mass spectra of target compounds
 Quantitation reports
 Mass spectra of TICs with three best library matches
 GPC chromatograms (if GPC performed)

<u>259</u>	<u>876</u>	—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—

c. Standards Data (All Instruments)

Initial Calibration Data (Form VI SV-1, SV-2)
 RICs and Quan Reports for all Standards
 Continuing Calibration Data (Form VII SV-1, SV-2)
 RICs and Quantitation Reports for all Standards
 Semivolatile GPC Calibration Data-UV
 detector traces

<u>877</u>	<u>1017</u> 1038 AA9/26/94	—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—

d. Raw QC Data

DFTPP
 Blank Data
 Matrix Spike/Matrix Spike Duplicate Data

<u>1018</u>	<u>1038</u>	—	—	—	—
<u>1039</u>	<u>1050</u>	—	—	—	—
<u>1051</u>	<u>1066</u>	—	—	—	—

Pesticides

a. QC Summary

Surrogate Percent Recovery Summary (Form II PEST)
 MS/MSD Duplicate Summary (Form III PEST)
 Method Blank Summary (Form IV PEST)

<u>1067</u>	—	—	—	—	—
<u>1068</u>	—	—	—	—	—
<u>1069</u>	—	—	—	—	—

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 22596 SDG NO. FDB27 SDG NOS. TO FOLLOW _____
SAS NO. _____

PAGE NOS
FROM TO

CHECK
LAB EPA

6. Pesticides (cont.)

b. Sample Data

1070 1157

TCL Results - Organic Analysis Data Sheet
(Form I PEST)

Chromatograms (Primary Column)

Chromatograms from second GC column confirmation

GC Integration report or data system printout

Manual work sheets

For pesticides/Aroclors confirmed by GC/MS, copies
of raw spectra and copies of background-subtracted mass
spectra of target compounds (samples & standards)

c. Standards Data

1158 1403

Initial Calibration of Single Component

Analytes (Form VI PEST-1 and PEST-2)

Initial Calibration of Multicomponent Analytes

(Form VI PEST-3)

Analyte Resolution Summary (Form VI PEST-4)

Calibration Verification Summary (Form VII PEST-1)

Calibration Verification Summary (Form VII PEST-2)

Analytical Sequence (Form VIII PEST)

Florisil Cartridge Check (Form IX PEST-1)

Pesticide GPC Calibration (Form IX PEST-2)

Pesticide Identification Summary for Single Component
Analytes (Form X PEST-1)

Pesticide Identification Summary for Multicomponent
Analytes (Form X PEST-2)

Chromatograms and data system printouts

A printout of retention times and corresponding peak
areas or peak heights

Pesticide GPC calibration data - UV detector traces

d. Raw QC Data

Blank Data

Matrix Spike/Matrix Spike Duplicate Data

1404 1470
1471 1490

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. <u>22596</u>	SDG NO. <u>FDB27</u>	SDG NOS. TO FOLLOW _____
SAS NO. _____		

PAGE NOS	CHECK	
FROM TO	LAB EPA	

7. Miscellaneous Data

Original preparation and analysis forms or copies of
 preparation and analysis logbook pages
 Internal sample and sample extract transfer
 chain-of-custody records
 Screening records
 All instrument output, including strip charts
 from screening activities (describe or list)

<u>1491</u>	<u>1511</u>	<u>✓</u>	<u>✓</u>
<u>1512</u>	<u>1514</u>	<u>-</u>	<u>✓</u>
<u>NA</u>	<u>-</u>	<u>-</u>	<u>✓</u>
<u>NA</u>	<u>-</u>	<u>-</u>	<u>✓</u>

8. EPA Shipping/Receiving Documents

Airbills (No. of shipments 1)
 Chain-of-Custody Records
 Sample Tags
 Sample Log-In Sheet (Lab & DCI)
 Miscellaneous Shipping/Receiving Records
 (describe or list)

<u>1516</u>	<u>-</u>	<u>-</u>	<u>✓</u>
<u>1517</u>	<u>1518</u>	<u>-</u>	<u>✓</u>
<u>1520</u>	<u>1549</u>	<u>-</u>	<u>✓</u>
<u>1519</u>	<u>-</u>	<u>-</u>	<u>✓</u>

9. Internal Lab Sample Transfer Records and Tracking Sheets
 (describe or list)

<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>

10. Other Records (describe or list)

Telephone Communication Log

<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>

11. Comments:

Completed by:
 (CLP Lab)

April A. Adams
 (Signature)

for JANIE GARZA/DC OFFICER
 (Printed Name/Title)

9/26/94
 (Date)

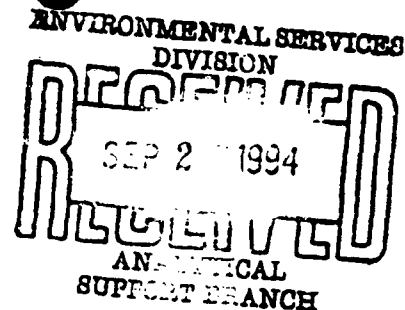
Audited by:
 (EPA)

Frank C. Stencer
 (Signature)

Frank C. Stencer
 (Printed Name/Title)

10/3/94
 (Date)

SDG NARRATIVE



SECTION I

LABORATORY: CHESTER LAB-NET HOUSTON

DOC. CONT NO: 22596

CASE NO.: 22596

SDG NO.: FDB27

LAB NO.: H94-08.216

CONTRACT NO.: 68-D2-0020

I. RECEIPT

A. DATE: 8-23-94.

B. NO. OF SAMPLES : Ten (10).

C. CLIENT SAMPLE IDs: FDB27, FDB29, FDB30, FDB32, FDB33, FDB35,
FDB36, FDB38, FDB39, FDB41.

D. SAMPLE TYPE: Soil.

E. ANALYSIS REQUESTED: Full organics following the 3/91 CLP
OLM01.9 SOW.

F. SHIPPING PROBLEMS: None.

G. DOCUMENTATION PROBLEMS: Original RS0830V* in Case 22589 BPD69.
Original FS0816C* in Case 22468 AAC76.
Original FS0902C* in Case 22600 AHS21.
Original FS0830C* in Case 22589 BPD69.

H. QC DISTRIBUTION (MS AND MSD):

LEVEL	MATRIX	VOA SV PEST/PCB ORGANICS
-------	--------	--------------------------

LOW	SOIL	FDB32
-----	------	-------

II. PREPARATION

A. ANALYTICAL LEVELS: Low level.

B. EXTRACTION PROBLEMS: All sample matrices were extremely complex it appears that several should have been classified as HIGH level this should be apparent from the elevated baseline incurred from the semivolatile analysis. All the extracts were dark and viscous. Samples were run per the region's interpretation of the SOW therefore no initial dilution was preformed to account for the dark viscous nature of the extracts.

III. ANALYSIS

A. ANALYSIS PROBLEMS: Volatiles - No more than one compound on the initial calibration % RSD was outside of QC-limits. No more than one compound on the continuing calibration % D was outside of QC-limits. Sample FDB29, FDB29RE, FDB32, FDB32MS, FDB32MSD, FDB35, FDB35RE, FDB36, FDB36RE, FDB38, FDB38RE, FDB39, FDB39RE, FDB41, FDB41RE, all have internal standards outside of QC-Limits. Payment should be allowed for all the re-analysis.

Semivolatiles - No more than one compounds % RSD on the initial calibrations was outside of QC-limits. No more than two compounds % D on the continuing calibrations were outside of QC-limits. The MS/MSD % REC for 4-Nitrophenol, 2,4-Dinitrotoluene, Penta-chlorophenol, and Acenaphthene on the MS were outside of QC-limits because of the sample matrix. The % RPD for Acenaphthene was also outside of the QC-limits. Internal standards were outside of QC-limits for sample FDB36, FDB36RE, FDB32, FDB32MS, FDB32MSD, FDB35, FDB35RE because of sample matrix. Payment should be allowed for the re-analysis. Sample FDB33 was diluted 1/10 FDB33DL 1/50 to bring 2-Methylnapthene within the calibration range.

Pest. - The % RSD for Methoxychlor on the initial calibration on the DB5 column was outside of QC-Limits. The RPD on the calibration verification for beta-BHC on DB1701 and DB5 09/09/94 1157 was outside of QC-limits. DCB was not recovered on sample FDB32MS and FDB32MSD therefore no retention times are reported on form 8D due to sample matrix. The MS/MSD % REC of 4,4'-DDT was 0 due the the sample matrix. Gamma-BHC's recovery was also outside of QC-limits for the MS. Dieldrin and Endrin % REC for the MSD were outside of QC-limits. The % RPD for Heptachlor, Dieldrin, Endrin, and 4,4-DDT were also outside of QC-limits.

B. SURROGATE PROBLEMS: Volatiles - None.

Semivolatiles - Sample FDB32, and FDB32MS have one surrogate outside of QC-limits, they were not re-analyzed because they are part of the QC-series.

Pest. - Several surrogates were outside of the advisory QC limit.

000002

IV. COMMENTS

The latest revision of the NIST mass spectral library for the Finnigan NOVA 4X computers is not currently available. Finnigan has informed Keystone Lab - Houston that this software revision is currently in beta testing. Slight differences in values found on forms 1-10 and sample and standard quantitation reports may exist due to variations in rounding off procedures in the computers used. Manual edits were preformed to facilitate the processing of co-eluting peaks and incorrectly generated computer baselines. The edits are initialized and dated by the appropriate analyst. The GPC utilized at this facility does not lose half of the extract surrogate and spiking volumes are corrected accordingly.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions listed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Mark Fullerton - Project Manager

September 26, 1994

Date

LABORATORY SAMPLE DELIVERY GROUP (SDG)
TRAFFIC REPORT (TR) COVER SHEET
ORGANICS

Laboratory Name: Keystone Lab-Houston
EPA Contract No.: 68-D2-0020
EPA Case No.: 22596-06
Full Sample Price: \$775.00

Laboratory Code: KEYTX
SAS No.: -
EPA SDG No.: FDB 27

SDG No./First Sample in SDG: FDB 27
(Lowest EPA Sample Number
in first shipment of samples
received under SDG)

Sample Receipt Date: 8-23-1994
(MM/DD/YY)

Last Sample in SDG: FDB 41
(Highest EPA Sample Number
in last shipment of samples
received under SDG)

Sample Receipt Date: 8-23-1994
(MM/DD/YY)

EPA Sample Numbers in the SDG (listed in alphanumeric order):

1	<u>FDB 27</u>	11	<u>/</u>
2	<u>29</u>	12	<u>/</u>
3	<u>30</u>	13	<u>/</u>
4	<u>32</u>	14	<u>/</u>
5	<u>33</u>	15	<u>/</u>
6	<u>35</u>	16	<u>/</u>
7	<u>36</u>	17	<u>/</u>
8	<u>37</u>	18	<u>/</u>
9	<u>39</u>	19	<u>/</u>
10	<u>41</u>	20	<u>/</u>

NOTE: There are a maximum of 20 samples in an SDG.

Attach Traffic Reports to this form in alphanumeric order (i.e., the order listed on this form).

D. [Signature]
Sample Custodian

8-23-94
Date



United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

22596

1. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	2. Preservative (Enter in Column D) 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved	2. Region No. VI	3. Sampling Co. WESTON	4. Date Shipped 8/22/94	Carrier Federal Express	6. Date Received -- Received by: 08/23/94 D. massaudi
		Sampler (Name) Jim Quackenbush		Airbill Number 9878882996		Laboratory Contract Number 1010
		Sampler Signature [Signature]		5. Ship To Keystone Lab 8300 West Park Drive Houston TX 77063 (713) 266-6800 ATTN: Dela Massaudi		Date Received
		3. Purpose* Early Action Lead <input checked="" type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED Long-Term Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input checked="" type="checkbox"/> SI <input type="checkbox"/> ESI <input type="checkbox"/> FS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD		7. Transfer to:		Received by
				Contract Number		Price

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 2) Other:	E RAS Analysis			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases		
					VOA	BNA	Pest/POB						High only ARO/TOX	Solids	Water-Miscible Lq.
FDB32	5	L	G	5	X	X	X	6-037729-31	SED-1	8/22/94 0945	MFDP04	PJG			
FDB33	5	L	G	5	X	X	X	6-037733-35	SED-2	8/22/94 1015	MFDP05	PJG			
FDB35	5	L	G	5	X	X	X	6-037737-39	SED-3	8/22/94 1050	MFDP06	PJG			
FDB36	5	L	G	5	X	X	X	6-037741-43	SED-4	8/22/94 0920	MFDP07	PJG			
FDB38	5	L	G	5	X	X	X	6-037745-47	SED-5	8/22/94 1000	MFDP08	PJG			
FDB39	5	L	G	5	X	X	X	6-024907-09	SED-6	8/22/94 1000	MFDP09	PJG			
FDB41	5	L	G	5	X	X	X	6-024911-13	SED-7	8/22/94 1100	MFDP10	PJG			
FDB27	5	L	G	5	X	X	X	6-037717-19	SS-1	8/22/94 1140	MFDP21	PJG			
FDB29	5	L	G	5	X	X	X	6-037721-23	SS-2	8/22/94 1051	MFDP02	PJG			
FDB30	5	L	G	5	X	X	X	6-037725-27	SS-3	8/22/94 1115	MFDP03	PJG			
Shipment for Case Complete? (Y/N)		Page 1 of 1		Sample(s) to be Used for Laboratory QC FDB32				Additional Sampler Signatures [Signature]		Chain of Custody Seal Number(s)					

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) [Signature]	Date / Time 8/22/94 1400	Received by: (Signature) Federal Express	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) D. massaudi	Date / Time 8/23/94 0900	Remarks Am	Is custody seal intact? Y/N/none

DISTRIBUTION:

Blue - Region Copy

White - Lab Copy for Return to Region

Pink - SMO Copy

Yellow - Lab Copy for Return to SM

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
SEE REVERSE FOR PURPOSE CODE DEFINITION

355916

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: KEYSTONE ENV. Contract: 68-D2-0020
 Lab Code: KEYTX Case No.: 22596 SAS No.: _____ SDG No.: FDB27
 Level: (low/med) LOW

EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01 FDB27	70	72	69	67	63	46	70	66	0
02 FDB29	69	64	55	71	76	57	75	75	0
03 FDB30	58	69	52	67	65	55	72	60	0
04 FDB32	76	64	46	68	70	13 *	66	65	1
05 FDB33	0 D	0 D	0 D	0 D	0 D	0 D	0 D	0 D	0
06 FDB33DL	0 D	0 D	0 D	0 D	0 D	0 D	0 D	0 D	0
07 FDB35	56	58	52	54	60	55	62	52	0
08 FDB35RE	39	49	42	42	40	44	41	39	0
09 FDB36	41	59	62	46	35	50	42	41	0
10 FDB36RE	53	100	115	61	51	61	59	50	0
11 FDB38	60	58	46	59	65	41	60	60	0
12 FDB38DL	0 D	0 D	0 D	0 D	0 D	0 D	0 D	0 D	0
13 FDB39	64	63	50	63	62	32	64	61	0
14 FDB41	65	68	58	63	62	37	66	63	0
15 FDB32MS	81	137 *	70	63	69	45	62	52	1
16 FDB32MSD	70	90	59	52	61	23	58	52	0
17 SBLK1	84	83	89	79	86	76	81	78	0

QC LIMITS

S1 (NBZ) = Nitrobenzene-d5 (23-120)
 S2 (FBP) = 2-Fluorobiphenyl (30-115)
 S3 (TPH) = Terphenyl-d14 (18-137)
 S4 (PHL) = Phenol-d5 (24-113)
 S5 (2FP) = 2-Fluorophenol (25-121)
 S6 (TBP) = 2,4,6-Tribromophenol (19-122)
 S7 (2CP) = 2-Chlorophenol-d4 (20-130) (advisory)
 S8 (DCB) = 1,2-Dichlorobenzene-d4 (20-130) (advisory)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: KEYSTONE ENV.Contract: 68-D2-0020Lab Code: KEYTXCase No.: 22596

SAS No.: _____

SDG No.: FDB27Matrix Spike - EPA Sample No.: FDB32Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	3250	0	1844	57	26- 90
2-Chlorophenol	3250	0	2109	65	25-102
1,4-Dichlorobenzene	2160	0	1357	63	28-104
N-Nitroso-di-n-prop. (1)	2160	0	2517	116	41-126
1,2,4-Trichlorobenzene	2160	0	1663	77	38-107
4-Chloro-3-methylphenol	3250	0	1238	38	26-103
Acenaphthene	2160	0	3066	142 *	31-137
4-Nitrophenol	3250	0	0	0 *	11-114
2,4-Dinitrotoluene	2160	0	0	0 *	28- 89
Pentachlorophenol	3250	0	0	0 *	17-109
Pyrene	2160	0	2182	101	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Phenol	3250	1712	53	7	35 26- 90
2-Chlorophenol	3250	1958	60	8	50 25-102
1,4-Dichlorobenzene	2160	1101	51	21	27 28-104
N-Nitroso-di-n-prop. (1)	2160	2104	97	18	38 41-126
1,2,4-Trichlorobenzene	2160	1337	62	22	23 38-107
4-Chloro-3-methylphenol	3250	1305	40	5	33 26-103
Acenaphthene	2160	834.6	39	114 *	19 31-137
4-Nitrophenol	3250	0	0 *	0	50 11-114
2,4-Dinitrotoluene	2160	0	0 *	0	47 28- 89
Pentachlorophenol	3250	0	0 *	0	47 17-109
Pyrene	2160	1731	80	23	36 35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 11 outside limitsSpike Recovery: 7 out of 22 outside limits

COMMENTS:



United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

SAS No.
(if applicable)

Case No.

22596

1. Project Code		Account Code		2. Region No. Sampling Co.		4. Date Shipped Carrier		6. Matrix (Enter in Column A)		7. Preservative (Enter in Column D)															
				VI. WESTON		8/22/94 Fed Express		1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)		1. HCl 2. HNO3 3. NaOH 4. H2SO4 5. K2Cr2O7 6. Ice only 7. Other (specify in Column D) N. Not preserved															
Regional Information				3. Sampler (Name)		Airbill Number																			
				Pam Quackenbush		9878883000																			
Non-Superfund Program				3. Purpose*		5. Ship To																			
				SF PRP ST FED		Silver Valley Labs, INC. One Government Gulch Kellogg, ID 83037																			
Site Name				Early Action		Long-Term Action																			
Delta Shipped				CLEM PA REM RI SI ESI		FS RD RA O&M NPLD																			
City, State		Site Spill ID				ATTN: Kevin Booth																			
Houma LA		ZZ																							
CLP Sample Numbers (from labels)		A Matrix (from Box 6)		B Conc.: Low Med High		C Sample Type: Comp./ Grab		D Preservative (from Box 7)		E - RAS Analysis		F Regional Specific Tracking Number or Tag Numbers		G Station Location Identifier		H Mo/Day/Year/Time Sample Collection		I Corresponding CLP Organic Sample No.		J Sampler Initials		K Field QC Qualifier			
		Other:						Other:		Diss. Metals Total Metals Cyanide NO3/NO2 Fluoride pH Conduct.														B = Blank S = Spike D = Duplicate R = Rinse PE = Perform. Eval. -- = Not a QC Sample	
MFDP04		5		L		G		6		XX		6-037732		SED-1		8/22/94 1015		FDB 32		PJO		---			
MFDP05		5		L		G		6		XX		6-037736		SED-2		8/22/94 1015		FDB 33		PJO		---			
MFDP06		5		L		G		6		XX		6-037740		SED-3		8/22/94 1050		FDB 35		PJO		---			
MFDP07		5		L		G		6		XX		6-037740R4		SED-4		8/22/94 0920		FDB 36		PJO		---			
MFDP08		5		L		G		6		XX		6-037748		SED-5		8/22/94 1000		FDB 38		PJO		---			
MFDP09		5		L		G		6		XX		6-037748-021910		SED-6		8/22/94 1000		FDB 39		PJO		Q/MFDP08			
MFDP10		5		L		G		6		XX		6-024914		SED-7		8/22/94 1100		FDB 41		PJO		---			
MFDP01		5		L		G		6		XX		6-037720		SS-1		8/22/94 1140		FDB 27		PJO		---			
MFDP02		5		L		G		6		XX		6-037724		SS-2		8/22/94 1051		FDB 29		PJO		---			
MFDP03		5		L		G		6		XX		6-037728		SS-3		8/22/94 1115		FDB 30		PJO		---			
Shipment for Case Complete? (Y/N)		Page		Sample(s) to be Used for Laboratory QC		Additional Sampler Signatures		Chain of Custody Seal Number(s)																	
(Y)		1 of 1		MFDP04		Pam Quackenbush																			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Pam Quackenbush	8/22/94 1100	FED EXPRESS			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Green - Region Copy
White - Lab Copy for Return to Region

Pink - SMO Copy
Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

FULL INORGANICS
COMPLETE SDG FILE (CSF)
INVENTORY SHEET

Lab Name: SVL ANALYTICAL, INC.

City/State: NELLOGG, IDAHO

Case No. 22596 SDG No. MEDP01 SDG Nos. to Follow: MEDP01

SAS No. _____ Contract No. 68-D20042 SOW No. ILM02.1

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II D and Section III V)

	Page Nos.		(Please Check:)	
	From	To	Lab	Region
1. Inventory Sheet (DC-2) (Do not number)			<u>X</u>	_____
2. Cover Page	<u>1</u>	<u>1</u>	<u>X</u>	_____
3. Inorganic Analysis Data Sheet (Form I-IN)	<u>2</u>	<u>11</u>	<u>X</u>	_____
4. Initial & Continuing Calibration Verification (Form IIA-IN)	<u>12</u>	<u>17</u>	<u>X</u>	_____
5. CRDL Standards For AA and ICP (Form IIB-IN)	<u>18</u>	<u>22</u>	<u>X</u>	_____
6. Blanks (Form III-IN)	<u>23</u>	<u>26</u>	<u>X</u>	_____
7. ICP Interference Check Sample (Form IV-IN)	<u>27</u>	<u>29</u>	<u>X</u>	_____
8. Spike Sample Recovery (Form VA-IN)	<u>30</u>	<u>31</u>	<u>X</u>	_____
9. Post Digest Spike Sample Recovery (Form VB-IN)	<u>32</u>	<u>32</u>	<u>X</u>	_____
10. Duplicates (Form VI-IN)	<u>33</u>	<u>34</u>	<u>X</u>	_____
11. Laboratory Control Sample (Form VII-IN)	<u>35</u>	<u>38</u>	<u>X</u>	_____
12. Standard Addition Results (Form VIII-IN)	<u>39</u>	<u>39</u>	<u>X</u>	_____
13. ICP Serial Dilutions (Form IX-IN)	<u>40</u>	<u>40</u>	<u>X</u>	_____
14. Instrument Detection Limits (Form X-IN)	<u>41</u>	<u>47</u>	<u>X</u>	_____
15. ICP Interelement Correction Factors (Form XIA-IN)	<u>48</u>	<u>49</u>	<u>X</u>	_____
16. ICP Interelement Correction Factors (Form XIB-IN)	<u>50</u>	<u>55</u>	<u>X</u>	_____
17. ICP Linear Ranges (Form XII-IN)	<u>56</u>	<u>57</u>	<u>X</u>	_____
18. Preparation Log (Form XIII-IN)	<u>58</u>	<u>62</u>	<u>X</u>	_____
19. Analysis Run Log (Form XIV-IN)	<u>63</u>	<u>80</u>	<u>X</u>	_____
20. ICP Raw Data	<u>81</u>	<u>246</u>	<u>X</u>	_____
21. Furnace AA Raw Data	<u>247</u>	<u>268</u>	<u>X</u>	_____
22. Mercury Raw Data	<u>269</u>	<u>271</u>	<u>X</u>	_____

	Page Nos.		(Please Check:)	
	From	To	Lab	Region
23. Cyanide Raw Data	272	275	X	
24. Preparation Logs Raw Data	276	280	X	
25. Percent Solids Determination Log	281	282	X	
26. Traffic Report	NA			
27. EPA Shipping/Receiving Documents				
Airbill (No. of Shipments <u>1</u>)	283	283	X	
Chain-of-Custody Records	284	284	X	
Sample Tags	285	294		
Sample Log-In Sheet (Lab & DCI)	295	295	X	
SDG Cover Sheet	296	296	X	
28. Misc. Shipping/Receiving Records (list all individual records)				
Telephone Logs	NA			
NONCONFORMANCE MEMO	297	297	X	
COOLER RECEIPT CHECKLIST	298	298	X	
29. Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)	NA			
_____	NA			
_____	NA			
30. Internal Original Sample Prep & Analysis Records (describe or list)				
Prep Records STANDARD PREP LOGS	299	306	X	
Analysis Records RUN LOGS	307	321	X	
Description _____	NA			
31. Other Records (describe or list)				
Telephone Communication Log	NA			
_____	NA			
_____	NA			
32. Comments:				
DISK TO SMD				

Completed by (CLP Lab): Melba Bencich
(Signature)

MELBA BENCICH
DOCUMENT CONTROL OFFICER
(Print Name & Title)

SEPTEMBER 16, 1994
(Date)

Audited by (EPA): _____

(Signature)

(Print Name & Title)

(Date)

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SVL_ANALYTICAL_INC. _____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596 SAS No.: _____ SDG No.: MFDP01

SOW No.: ILM02.1

EPA Sample No.

MFDP01 _____
MFDP02 _____
MFDP03 _____
MFDP04 _____
MFDP04D _____
MFDP04S _____
MFDP05 _____
MFDP06 _____
MFDP07 _____
MFDP08 _____
MFDP09 _____
MFDP10 _____

Lab Sample ID

MFDP01 _____
MFDP02 _____
MFDP03 _____
MFDP04 _____
MFDP04D _____
MFDP04S _____
MFDP05 _____
MFDP06 _____
MFDP07 _____
MFDP08 _____
MFDP09 _____
MFDP10 _____

Were ICP interelement corrections applied ?

Yes/No YES

Were ICP background corrections applied ?

Yes/No YES

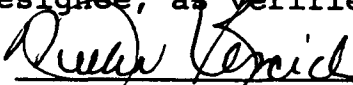
If yes - were raw data generated before
application of background corrections ?

Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature:



Name:

MELBA BENCICH

Date:

SEPTEMBER 15, 1994

Title:

DOCUMENT CONTROL OFFICER

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP01

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596_ SAS No.: _____ SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP01

Level (low/med): LOW_ Date Received: 08/23/94

% Solids: _70.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9330			P
7440-36-0	Antimony	8.1	B	N	P
7440-38-2	Arsenic	7.7		SN	F
7440-39-3	Barium	4920			P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	17300			P
7440-47-3	Chromium	18.5			P
7440-48-4	Cobalt	9.1	B		P
7440-50-8	Copper	32.8		E	P
7439-89-6	Iron	16400			P
7439-92-1	Lead	117			F
7439-95-4	Magnesium	4200			P
7439-96-5	Manganese	467			P
7439-97-6	Mercury	0.14	U	N*	CV
7440-02-0	Nickel	27.2			P
7440-09-7	Potassium	1890			P
7782-49-2	Selenium	0.34	B	W	F
7440-22-4	Silver	1.9	B		P
7440-23-5	Sodium	164	B		P
7440-28-0	Thallium	0.53	B		F
7440-62-2	Vanadium	23.7			P
7440-66-6	Zinc	206			P
	Cyanide	0.71	U		CA

Color Before: BROWN_ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_ Clarity After: _____ Artifacts: _____

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP02

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D20042

Lab Code: SILVER Case No.: 22596 SAS No.: SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP02

Level (low/med): LOW Date Received: 08/23/94

% Solids: 75.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8660			P
7440-36-0	Antimony	7.5	U	N	P
7440-38-2	Arsenic	29.7		N	F
7440-39-3	Barium	18900			P
7440-41-7	Beryllium	0.59	B		P
7440-43-9	Cadmium	2.6			P
7440-70-2	Calcium	11100			P
7440-47-3	Chromium	87.1			P
7440-48-4	Cobalt	12.3	B		P
7440-50-8	Copper	63.8		E	P
7439-89-6	Iron	18800			P
7439-92-1	Lead	345			P
7439-95-4	Magnesium	3460			P
7439-96-5	Manganese	530			P
7439-97-6	Mercury	0.77		N*	CV
7440-02-0	Nickel	16.5			P
7440-09-7	Potassium	1580			P
7782-49-2	Selenium	0.53	B		F
7440-22-4	Silver	2.9			P
7440-23-5	Sodium	219	B		P
7440-28-0	Thallium	0.60	B	W	F
7440-62-2	Vanadium	24.3			P
7440-66-6	Zinc	666			P
	Cyanide	0.66	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP03

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596_ SAS No.: _____ SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP03

Level (low/med): LOW_ Date Received: 08/23/94

% Solids: _72.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11500	—	—	P
7440-36-0	Antimony	7.8	U	N	P
7440-38-2	Arsenic	20.7	B	N	F
7440-39-3	Barium	14700	—	—	P
7440-41-7	Beryllium	0.86	B	—	P
7440-43-9	Cadmium	1.5	—	—	P
7440-70-2	Calcium	9230	—	—	P
7440-47-3	Chromium	90.2	—	—	P
7440-48-4	Cobalt	12.0	B	—	P
7440-50-8	Copper	46.9	—	E	P
7439-89-6	Iron	22000	—	—	P
7439-92-1	Lead	174	—	—	P
7439-95-4	Magnesium	4430	—	—	P
7439-96-5	Manganese	410	—	—	P
7439-97-6	Mercury	0.39	—	N*	CV
7440-02-0	Nickel	19.1	—	—	P
7440-09-7	Potassium	2180	—	—	P
7782-49-2	Selenium	0.50	B	W	F
7440-22-4	Silver	1.8	B	—	P
7440-23-5	Sodium	490	B	—	P
7440-28-0	Thallium	0.51	B	—	F
7440-62-2	Vanadium	29.1	—	—	P
7440-66-6	Zinc	367	—	—	P
	Cyanide	0.69	U	—	CA

Color Before: BROWN_ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_ Clarity After: _____ Artifacts: _____

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP04

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D20042

Lab Code: SILVER Case No.: 22596 SAS No.: SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP04

Level (low/med): LOW Date Received: 08/23/94

% Solids: 74.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6430	-	-	P
7440-36-0	Antimony	10.5	B	N	P
7440-38-2	Arsenic	22.1	-	SN	F
7440-39-3	Barium	11900	-	-	P
7440-41-7	Beryllium	0.53	B	-	P
7440-43-9	Cadmium	4.9	-	-	P
7440-70-2	Calcium	12000	-	-	P
7440-47-3	Chromium	527	-	-	P
7440-48-4	Cobalt	9.7	B	-	P
7440-50-8	Copper	75.2	-	E	P
7439-89-6	Iron	21500	-	-	P
7439-92-1	Lead	632	-	-	F
7439-95-4	Magnesium	2850	-	-	P
7439-96-5	Manganese	480	-	-	P
7439-97-6	Mercury	1.3	-	N*	CV
7440-02-0	Nickel	18.9	-	-	P
7440-09-7	Potassium	1570	-	-	P
7782-49-2	Selenium	0.37	B	-	F
7440-22-4	Silver	4.1	-	-	P
7440-23-5	Sodium	331	B	-	P
7440-28-0	Thallium	0.61	B	W	F
7440-62-2	Vanadium	24.4	-	-	P
7440-66-6	Zinc	835	-	-	P
	Cyanide	0.67	U	-	CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP05

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596_ SAS No.: _____ SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP05

Level (low/med): LOW_ Date Received: 08/23/94

% Solids: _76.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6830	-		P
7440-36-0	Antimony	7.5	U	N	P
7440-38-2	Arsenic	6.3	B	N	F
7440-39-3	Barium	15100	-		P
7440-41-7	Beryllium	0.49	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	4030	-		P
7440-47-3	Chromium	54.4	-		P
7440-48-4	Cobalt	11.4	B		P
7440-50-8	Copper	48.4	-	E	P
7439-89-6	Iron	43200	-		P
7439-92-1	Lead	185	-		P
7439-95-4	Magnesium	2100	-		P
7439-96-5	Manganese	231	-		P
7439-97-6	Mercury	0.22	-	N*	CV
7440-02-0	Nickel	25.2	-		P
7440-09-7	Potassium	1270	B		P
7782-49-2	Selenium	0.18	U		F
7440-22-4	Silver	3.3	-		P
7440-23-5	Sodium	180	B		P
7440-28-0	Thallium	0.40	B		F
7440-62-2	Vanadium	18.7	-		P
7440-66-6	Zinc	302	-		P
	Cyanide	0.65	U		CA

Color Before: BROWN_ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_ Clarity After: _____ Artifacts: _____

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP06

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D20042

Lab Code: SILVER Case No.: 22596 SAS No.: SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP06

Level (low/med): LOW Date Received: 08/23/94

% Solids: 58.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6160			P
7440-36-0	Antimony	9.7	U	N	P
7440-38-2	Arsenic	4.2	B	N	F
7440-39-3	Barium	18000			P
7440-41-7	Beryllium	0.39	B		P
7440-43-9	Cadmium	1.8			P
7440-70-2	Calcium	4810			P
7440-47-3	Chromium	35.2			P
7440-48-4	Cobalt	8.8	B		P
7440-50-8	Copper	33.6		E	P
7439-89-6	Iron	10200			P
7439-92-1	Lead	158			P
7439-95-4	Magnesium	2470			P
7439-96-5	Manganese	120			P
7439-97-6	Mercury	0.23		N*	CV
7440-02-0	Nickel	12.9	B		P
7440-09-7	Potassium	1140	B		P
7782-49-2	Selenium	0.31	B		F
7440-22-4	Silver	1.3	B		P
7440-23-5	Sodium	181	B		P
7440-28-0	Thallium	0.41	B		F
7440-62-2	Vanadium	14.9	B		P
7440-66-6	Zinc	149			P
	Cyanide	0.85	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP07

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596_ SAS No.: _____ SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP07

Level (low/med): LOW_ Date Received: 08/23/94

% Solids: _74.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3400	-		P
7440-36-0	Antimony	7.6	U	N	P
7440-38-2	Arsenic	4.9	-	SN	F
7440-39-3	Barium	5440	-		P
7440-41-7	Beryllium	0.29	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	86100	-		P
7440-47-3	Chromium	58.3	-		P
7440-48-4	Cobalt	5.0	B		P
7440-50-8	Copper	66.8	-	E	P
7439-89-6	Iron	23200	-		P
7439-92-1	Lead	92.0	-		P
7439-95-4	Magnesium	5300	-		P
7439-96-5	Manganese	245	-		P
7439-97-6	Mercury	0.13	U	N*	CV
7440-02-0	Nickel	9.4	B		P
7440-09-7	Potassium	703	B		P
7782-49-2	Selenium	0.19	U	W	F
7440-22-4	Silver	1.4	B		P
7440-23-5	Sodium	241	B		P
7440-28-0	Thallium	0.50	B	W	F
7440-62-2	Vanadium	9.0	B		P
7440-66-6	Zinc	805	-		P
	Cyanide	0.67	U		CA

Color Before: BROWN_ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_ Clarity After: _____ Artifacts: _____

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP08

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596_ SAS No.: _____ SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP08

Level (low/med): LOW_ Date Received: 08/23/94

% Solids: _52.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9090	-		P
7440-36-0	Antimony	10.9	U	N	P
7440-38-2	Arsenic	24.8		SN	F
7440-39-3	Barium	20100	-		P
7440-41-7	Beryllium	0.79	B		P
7440-43-9	Cadmium	1.5	U		P
7440-70-2	Calcium	9420	-		P
7440-47-3	Chromium	37.8	-		P
7440-48-4	Cobalt	13.5	B		P
7440-50-8	Copper	61.3	-	E	P
7439-89-6	Iron	19800	-		P
7439-92-1	Lead	181	-		P
7439-95-4	Magnesium	3740	-		P
7439-96-5	Manganese	280	-		P
7439-97-6	Mercury	0.29	-	N*	CV
7440-02-0	Nickel	24.4	-		P
7440-09-7	Potassium	1760	B		P
7782-49-2	Selenium	0.27	U		F
7440-22-4	Silver	2.2	B		P
7440-23-5	Sodium	289	B		P
7440-28-0	Thallium	0.76	B		F
7440-62-2	Vanadium	25.4	-		P
7440-66-6	Zinc	449	-		P
	Cyanide	0.95	U		CA

Color Before: BROWN_ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_ Clarity After: _____ Artifacts: _____

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP09

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596_ SAS No.: _____ SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP09

Level (low/med): LOW_ Date Received: 08/23/94

% Solids: 56.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6890			P
7440-36-0	Antimony	12.5	B	N	P
7440-38-2	Arsenic	16.3		SN	F
7440-39-3	Barium	17300			P
7440-41-7	Beryllium	0.75	B		P
7440-43-9	Cadmium	1.7	B		P
7440-70-2	Calcium	14200			P
7440-47-3	Chromium	39.1			P
7440-48-4	Cobalt	10.5	B		P
7440-50-8	Copper	55.2		E	P
7439-89-6	Iron	16400			P
7439-92-1	Lead	195			P
7439-95-4	Magnesium	3270			P
7439-96-5	Manganese	305			P
7439-97-6	Mercury	0.30		N*	CV
7440-02-0	Nickel	19.4			P
7440-09-7	Potassium	1420	B		P
7782-49-2	Selenium	0.25	U		F
7440-22-4	Silver	3.5	B		P
7440-23-5	Sodium	253	B		P
7440-28-0	Thallium	0.47	B		F
7440-62-2	Vanadium	19.5			P
7440-66-6	Zinc	444			P
	Cyanide	0.88	U		CA

Color Before: BROWN_ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFDP10

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 22596_ SAS No.: _____ SDG No.: MFDP01

Matrix (soil/water): SOIL_ Lab Sample ID: MFDP10

Level (low/med): LOW_ Date Received: 08/23/94

% Solids: _47.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10900	—	—	P
7440-36-0	Antimony	12.0	U	N	P
7440-38-2	Arsenic	23.1	—	SN	F
7440-39-3	Barium	20500	—	—	P
7440-41-7	Beryllium	0.94	B	—	P
7440-43-9	Cadmium	1.6	U	—	P
7440-70-2	Calcium	16400	—	—	P
7440-47-3	Chromium	42.8	—	—	P
7440-48-4	Cobalt	16.8	B	—	P
7440-50-8	Copper	45.8	—	E	P
7439-89-6	Iron	21400	—	—	P
7439-92-1	Lead	125	—	—	F
7439-95-4	Magnesium	4610	—	—	P
7439-96-5	Manganese	509	—	—	P
7439-97-6	Mercury	0.21	U	N*	CV
7440-02-0	Nickel	28.4	—	—	P
7440-09-7	Potassium	1610	B	—	P
7782-49-2	Selenium	0.29	U	—	F
7440-22-4	Silver	3.3	B	—	P
7440-23-5	Sodium	360	B	—	P
7440-28-0	Thallium	0.62	B	—	F
7440-62-2	Vanadium	30.1	—	—	P
7440-66-6	Zinc	245	—	—	P
—	Cyanide	1.1	U	—	CA

Color Before: BROWN_ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_ Clarity After: _____ Artifacts: _____

Comments:

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SVL_ANALYTICAL_INC. _____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_ SAS No.: _____

SDG No.: MFDP01

Initial Calibration Source: EPA-LV 692/1

Continuing Calibration Source: SPEX _____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum	1878.0	1892.97	100.8	2000.0	1906.07	95.3	1843.12	92.2	P
Antimony	1024.0	1058.51	103.4	2000.0	1902.92	95.1	1802.04	90.1	P
Arsenic	50.9	52.77	103.7	50.0	50.28	100.6	51.63	103.3	F
Barium	1891.0	2003.37	105.9	2000.0	1947.00	97.4	1940.42	97.0	P
Beryllium	478.0	454.89	95.2	2000.0	2088.59	104.4	2099.03	105.0	P
Cadmium	493.0	516.19	104.7	2000.0	1880.13	94.0	1827.24	91.4	P
Calcium	48810.0	49258.48	100.9	5000.0	4809.32	96.2	4671.61	93.4	P
Chromium	480.0	492.85	102.7	2000.0	1880.67	94.0	1871.59	93.6	P
Cobalt	487.0	490.40	100.7	2000.0	1913.30	95.7	1844.72	92.2	P
Copper	486.0	502.57	103.4	2000.0	1938.12	96.9	1963.49	98.2	P
Iron	1962.0	2002.89	102.1	2000.0	1998.76	99.9	1969.52	98.5	P
Lead	4739.0	4934.48	104.1	2000.0	1830.33	91.5	1811.72	90.6	P
Magnesium	23859.0	24250.50	101.6	5000.0	4687.33	93.7	4482.16	89.6	P
Manganese	474.0	493.70	104.2	2000.0	1916.61	95.8	1833.12	91.7	P
Mercury	4.9	4.92	100.4	2.0	2.04	102.0	2.08	104.0	CV
Nickel	488.0	486.24	99.6	2000.0	1899.23	95.0	1875.31	93.8	P
Potassium	49182.0	51565.77	104.8	20000.0	19041.41	95.2	18667.36	93.3	P
Selenium	50.7	54.67	107.8	50.0	47.72	95.4	50.57	101.1	F
Silver	478.0	509.35	106.6	2000.0	2008.84	100.4	1931.82	96.6	P
Sodium	46804.0	50305.07	107.5	5000.0	4751.94	95.0	4805.38	96.1	P
Thallium	100.7	104.52	103.8	50.0	50.31	100.6	51.95	103.9	F
Vanadium	482.0	491.32	101.9	2000.0	1915.85	95.8	1907.49	95.4	P
Zinc	2921.0	2957.53	101.3	2000.0	1892.98	94.6	1833.68	91.7	P
Cyanide	90.0	96.81	107.6	100.0	99.33	99.3	103.18	103.2	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_ SAS No.: _____

SDG No.: MFDP01

Initial Calibration Source: EPA-LV 692/1

Continuing Calibration Source: SPEX_____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum				2000.0	1875.71	93.8			P
Antimony				2000.0	1814.14	90.7			P
Arsenic				50.0	51.92	103.8			F
Barium				2000.0	1890.64	94.5			P
Beryllium				2000.0	2065.16	103.3			P
Cadmium				2000.0	1805.97	90.3			P
Calcium				5000.0	4671.61	93.4			P
Chromium				2000.0	1853.54	92.7			P
Cobalt				2000.0	1824.98	91.2			P
Copper				2000.0	1988.86	99.4			P
Iron				2000.0	1963.68	98.2			P
Lead				2000.0	1793.54	89.7			P
Magnesium				5000.0	4528.94	90.6			P
Manganese				2000.0	1815.87	90.8			P
Mercury				2.0	2.08	104.0	1.99	99.5	CV
Nickel				2000.0	1840.83	92.0			P
Potassium				20000.0	18597.77	93.0			P
Selenium	50.7	50.79	100.2	50.0	46.94	93.9	50.90	101.8	F
Silver				2000.0	1910.42	95.5			P
Sodium				5000.0	4731.90	94.6			P
Thallium				50.0	51.86	103.7	51.43	102.9	F
Vanadium				2000.0	1895.05	94.8			P
Zinc				2000.0	1816.32	90.8			P
Cyanide				100.0	104.72	104.7	102.00	102.0	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042__

Lab Code: SILVER

Case No.: 22596_ SAS No.: _____

SDG No.: MFDP01

Initial Calibration Source: EPA-LV 692/1

Continuing Calibration Source: SPEX_____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									NR
Antimony									NR
Arsenic	50.9	52.24	102.6	50.0	49.86	99.7	49.40	98.8	F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead	98.4	101.27	102.9	50.0	49.86	99.7	49.44	98.9	F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium				50.0	46.94	93.9			F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide				100.0	110.33	110.3	110.74	110.7	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_ SAS No.: _____

SDG No.: MFDP01

Initial Calibration Source: EPA-LV 692/1

Continuing Calibration Source: SPEX_____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									NR
Antimony									NR
Arsenic				50.0	50.14	100.3			F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead				50.0	47.07	94.1			F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide				100.0	112.18	112.2			CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_ SAS No.: _____

SDG No.: MFDP01

Initial Calibration Source: EPA-LV 692/1

Continuing Calibration Source: SPEX_____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									NR
Antimony									NR
Arsenic	50.9	52.00	102.2	50.0	51.20	102.4	51.33	102.7	F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_ SAS No.: _____

SDG No.: MFDP01

Initial Calibration Source: EPA-LV 692/1

Continuing Calibration Source: SPEX_____

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									NR
Antimony									NR
Arsenic				50.0	49.87	99.7	51.47	102.9	F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

AA CRDL Standard Source: EPA-LV_____

ICP CRDL Standard Source: SPEX 42394_____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic	10.0	11.56	115.6					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	3.0	3.29	109.7					
Magnesium								
Manganese								
Mercury	0.2	0.24	120.0					
Nickel								
Potassium								
Selenium	5.0	5.00	100.0					
Silver								
Sodium								
Thallium	10.0	10.74	107.4					
Vanadium								
Zinc								

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SVL_ANALYTICAL_INC. _____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

AA CRDL Standard Source: _____

ICP CRDL Standard Source: SPEX 42394_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony				120.0	137.72	114.8	132.85	110.7
Arsenic								
Barium								
Beryllium								
Cadmium				10.0	13.26	132.6	12.54	125.4
Calcium								
Chromium								
Cobalt				100.0	99.75	99.8	100.79	100.8
Copper								
Iron								
Lead				125.0	90.32	72.3	90.35	72.3
Magnesium								
Manganese				30.0	31.76	105.9	31.76	105.9
Mercury								
Nickel								
Potassium								
Selenium								
Silver				20.0	24.44	122.2	24.82	124.1
Sodium								
Thallium								
Vanadium								
Zinc				40.0	41.82	104.6	40.83	102.1

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

AA CRDL Standard Source: EPA-LV_____

ICP CRDL Standard Source: SPEX 42394_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.93	109.3					
Barium								
Beryllium				10.0	9.19	91.9	9.57	95.7
Cadmium								
Calcium								
Chromium				20.0	21.34	106.7	19.79	99.0
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel				80.0	73.89	92.4	68.96	86.2
Potassium								
Selenium	5.0	4.02	80.4					
Silver								
Sodium								
Thallium								
Vanadium				100.0	99.43	99.4	98.16	98.2
Zinc								

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

AA CRDL Standard Source: EPA-LV_____

ICP CRDL Standard Source: SPEX 42394_____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic	10.0	11.82	118.2					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SVL_ANALYTICAL_INC. _____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

AA CRDL Standard Source: _____

ICP CRDL Standard Source: SPEX 42394_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper				50.0	53.25	106.5	54.49	109.0
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

3
BLANKS

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank	C	M
			1	C	2	C	3	C			
Aluminum	30.0	B	30.5	B	26.5	B	46.4	B	4.260	U	P
Antimony	28.5	U	28.5	U	28.5	U	28.9	B	5.700	U	P
Arsenic	0.9	U	0.9	U	-1.1	B	0.9	U	0.180	U	F
Barium	1.0	U	1.0	U	3.3	B	1.0	U	0.200	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.5	B	0.080	U	P
Cadmium	3.9	U	3.9	U	3.9	U	3.9	U	0.780	U	P
Calcium	34.1	U	34.1	U	34.1	U	53.0	B	6.820	U	P
Chromium	3.8	U	3.8	U	3.8	U	3.8	U	0.760	U	P
Cobalt	4.1	U	-6.2	B	4.1	U	4.1	U	-1.039	B	P
Copper	3.0	U	3.0	U	3.0	U	3.0	U	0.742	B	P
Iron	22.1	U	22.1	U	22.1	U	22.1	U	4.420	U	P
Lead	61.7	U	61.7	U	61.7	U	61.7	U	12.340	U	P
Magnesium	31.7	B	29.7	U	29.7	U	44.8	B	5.940	U	P
Manganese	1.5	U	1.5	U	1.5	U	1.5	U	0.300	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	18.0	U	18.0	U	18.0	U	18.0	U	3.600	U	P
Potassium	451.0	U	451.0	U	451.0	U	451.0	U	90.200	U	P
Selenium	0.7	U	0.7	U	0.7	U			0.140	U	F
Silver	6.6	B	2.6	U	2.6	U	2.6	U	0.520	U	P
Sodium	44.4	U	44.4	U	44.4	U	44.4	U	8.880	U	P
Thallium	0.9	U	0.9	U	1.3	B	0.9	B	0.180	U	F
Vanadium	-2.2	B	-3.7	B	-2.2	B	2.1	U	-0.710	B	P
Zinc	2.0	U	2.0	U	-2.0	B	2.0	U	1.017	B	P
Cyanide	10.0	U	10.0	U	10.0	U	10.0	U	0.500	U	CA

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank	C	M
			1	C	2	C	3	C			
Aluminum											NR
Antimony											NR
Arsenic	0.9	U	0.9	U	0.9	U	0.9	U			F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Magnesium											NR
Manganese											NR
Mercury			0.2	U							CV
Nickel											NR
Potassium											NR
Selenium	0.7	U	0.7	U	0.7	U	0.7	U			F
Silver											NR
Sodium											NR
Thallium			1.1	B							F
Vanadium											NR
Zinc											NR
Cyanide			10.0	U	10.0	U	10.0	U			CA

U.S. EPA - CLP

3
BLANKS

25

Lab Name: SVL_ANALYTICAL_INC._____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank	C	M
			1	C	2	C	3	C			
Aluminum											NR
Antimony											NR
Arsenic	0.9	U	1.0	B	0.9	U	-1.0	B			F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide			10.0	U							CA

3
BLANKS

Lab Name: SVL_ANALYTICAL_INC. _____

Contract: 68-D20042_

Lab Code: SILVER

Case No.: 22596_

SAS No.: _____

SDG No.: MFDP01

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)						Prepa- ration Blank	C	M
			1	C	2	C	3	C			
Aluminum											NR
Antimony											NR
Arsenic			0.9	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR